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An Address

ENTITLED

SHOULD INFANT MORTALITY BE REDUCED?

Delivered before the Section of Maternity and Child Welfare of the Congress of the Sanitary Institute at Hull, August 2nd, 1923.

BY FRED. E. WYNNE, M.B., B.CH. DUB., D.P.H.,
MEDICAL OFFICER OF HEALTH, SHEFFIELD; PROFESSOR OF PUBLIC HEALTH, SHEFFIELD UNIVERSITY.

I AM aware that to ask the question contained in my title will be regarded in some quarters as akin to blasphemy, but we have to face the fact that the question has been asked, will be asked again, and has been answered in the negative on very high authority. Those of us who are responsible for the saving of infant life and the prevention of infant suffering must, therefore, know what are the arguments brought against this work. The unparalleled fall in infant mortality during the last 20 years must be attributed very largely to improved sanitation generally, and especially to the intensive campaign of baby culture carried out by child welfare organisations throughout the country; as we have claimed the credit, so we must accept the responsibility for this state of affairs.

Speaking very briefly and generally, the objections to this reduction of mortality are two, viz.: (1) that it is interfering with the proper balance of births and deaths, and by increasing the rate of natural increase is adding to the difficulties of a nation already overpopulated; (2) that infant mortality is selective in its action, and that its reduction involves an undue survival of hereditary undesirables, thereby progressively deteriorating the race.

The Limits of Population.

To take the first and simpler argument first, there must obviously be a limit to population, and as population increases the rate of increase must be reduced; otherwise the annual increment would in time reach intolerable proportions. We have in parts of China and India and other eastern countries instances of communities which have reached and passed the limit of population, where whole races live in a condition bordering on starvation, and infanticide is the recognised practice, until famine and flood cut short the sufferings of the human swarm. Among these people the instinct of race preservation absolutely demands female infanticide, and it is interesting to note that, as always happens, this instinct is interpreted in terms of religion. The Chinaman must have a son, otherwise not only his own soul but those of his whole line of ancestors are condemned to eternal perdition. He therefore kills off female infants in order to make room for the hoped-for male. Until that son is born he will go on begetting children.

We are still far from these horrors which are inevitable when population overtakes the limits of the means of subsistence; but even in this country we have reached one of those crises foreseen by Malthus, when, in spite of all our industrial development and consequent power of importing food, our population question is already becoming acute; when it is at least rendering impossible the improved standard of living now universally demanded; and when, as many believe, the pressure of population is the real cause of all our social troubles, including war. This danger would be so real as to constitute a serious argument against a further reduction of the death-rate were it not that it is largely counterbalanced by a decline in the birth-rate.

The average birth-rate in England and Wales in the 10 years 1871 to 1880 was 35·4, and in the five years 1911 to 1915 it was 23·6. During the same periods the general death-rate was 21·4 and 14·3, while the infant mortality rate fell from 149 to 110. In 1922 the birth-rate in England and Wales was 20·6, the general death-rate 12·9, and the infant mortality rate 77. This fall in the birth-rate, however, is not yet sufficient wholly to compensate the two factors of lowered death-rate and increased population, so that the actual increment is as yet no less year by year. In fact the survival rate in England and Wales actually increased from 12 in 1910 to 13 in 1920. This has not, however, been our experience in Sheffield, where the infant mortality has fallen from 202 in 1901 to 82 in 1922. Notwithstanding this, the actual excess of births over deaths has fallen from 6874 in 1902 to 4707 in 1922, a decrease in natural increase of 2167, or 32 per cent. This is consequent on a decline in the birth-rate during the same period from 33·3 to 20·7, which has not been fully compensated by a decline in the general death-rate from 16·9 to 11·7.

We therefore feel that as far as the population question is concerned in Sheffield we can continue our child welfare work with an easy conscience. The law which correlates birth-rates and death-rates, though very imperfectly understood, is so universal and so well known that there is no need to quote examples of it. It seems always, however, to be assumed that the lowered death-rate is consequent on the decreased birth-rate. No doubt this is to some extent true. The mother of a few children is not physically exhausted like the mother of 12, and the individuals composing a small family naturally come in for a larger share of parental solicitude than the members of a large one. But although it cannot be proved in figures I am convinced that the reverse is also true, that when children are born and allowed to die off like flies, there will always be a tendency to the reckless begetting of more; whereas when children are born into an environment in which they can survive, their influence makes for an increased sense of parental responsibility in both father and mother and a consequent restraint which must have a marked influence on the birth-rate.

Survival of Undesirables.

We must now consider the second and more serious charge, that by preserving the lives of the hereditary degenerate and unfit we are causing a deterioration of the mental and physical standard of the race. If I could be convinced of this, I should unhesitatingly advise the closure of every child welfare centre in the country, for I hold that we have no right to allow public health policy to be dictated by our natural feelings of human sympathy for the individual. Really to permit or encourage any process that would lead to a marked degeneration of the race would, in the long run, lead to suffering on a far vaster scale even than that which we now attempt to alleviate. I have accordingly felt it necessary to examine rather closely the evidence on which these charges are based.

Prof. Karl Pearson and others of his school have been at great pains to produce mathematical demonstrations of the fact that longevity is an hereditary and transmissible quality. In this they have fully succeeded, though I do not suppose the fact was ever in dispute. But they proceed to certain deductions based on a somewhat elaborate calculus which is applied to data of admittedly doubtful accuracy. The first of these conclusions is, according to Prof. Raymond Pearl,[1] "that from 50 to 75 per cent. of the general death-rate of the population on which the calculations are based is determined fundamentally by factors of heredity and is not capable of essential modification or amelioration by any sort of environmental action, however well intentioned, however costly, or however well advertised." If this be so, it is simply amazing that death-rates have responded as they have done to environmental changes, for it cannot be suggested that any hereditary factors have been at work to reduce the death-rate from 21 to 12 in 50 years. I am reminded of Bishop Butler's comment on the doctrine of necessity or determinism: "this doctrine, if true, is as though it were not true." A necessary corollary of this theory is that the death-rate, and more especially, of course, the infant death-rate, is selective in its

[1] Biology of Death, Prof. Raymond Pearl. Lippincott, 1922.

action. Here, indeed, is the gravamen of the charge, for if this be so to the extent claimed, by trying to lessen infant mortality we are simply placing ourselves in the position of one who should cease weeding his garden and allow all his best plants to be choked by weeds. This view is developed especially by Dr. E. C. Snow in his "Studies in National Deterioration."[2]

The statistical studies in the heredity of longevity had been based on data obtained from the records of Royal families, from Burke's Peerage and Landed Gentry, and from the history of Quaker families, obviously exceptional sections of the population. Snow set himself the far more difficult task of applying similar statistical methods to the general population, for which purpose he took as his data the populations of English and Prussian rural districts. He found a high degree of negative correlation between the death-rate in the first year of life and that in later periods up to 8 years.

On these results Snow bases the following conclusions: "We assert with great confidence that a high mortality in infancy is followed by a corresponding low mortality in childhood, and conversely. The migratory tendencies in urban districts militate against the deletion of selective influences there, but we express the belief that those influences are just as prevalent in industrial as in rural communities, and could be measured by other means if the data were forthcoming. Our work has led us to the conclusion that infant mortality does effect a weeding out of the unfit; but though we would give this conclusion all due emphasis we do not wish to assert that any effort, however small, to the end of reducing this mortality is undesirable."

Personally I find some difficulty in understanding why the data acquired by Snow cannot be obtained as well for urban and industrial populations as for rural ones, and if I shared his conviction I should certainly say that efforts to encourage these weeds were most undesirable. Quite apart from the findings of mathematicians I presume no one would deny that infant mortality is to a great extent selective, and especially so where the environment is undesirable. Congenitally weak babies, of course, are more likely to die from any given cause than strong ones. To my mind the whole question hinges on this: by reducing infant mortality are we merely postponing the deaths of weakly infants, thereby prolonging their sufferings and increasing the burden of those responsible for them, or are we doing something to provide an environment in which potentially good citizens have a reasonable chance of surviving and reproducing?

Sheffield Child Welfare Figures.

In order to answer this question as far as Sheffield is concerned, I have examined the records of 100 deaths of infants who had been under the care of our child welfare centre, and of whose home conditions and heredity we accordingly had some knowledge. These were all deaths occurring in the same year, but were otherwise taken quite at random, and are therefore typical of infant mortality as it affects our city. Of these deaths I have taken three groups as having probably different correlations with hereditary and environmental conditions. The groups are: (1) prematurity, convulsions, marasmus, &c., which are presumably closely dependent on heredity; (2) respiratory diseases, which I should expect to have the lowest correlation with either heredity or unsatisfactory environment; and (3) diarrhœal diseases, in which I should expect the correlation to be intermediate between the other two.

Of these 100 deaths I find that 23 are due to prematurity and definitely congenital conditions; 39 to respiratory diseases, and 24 to diarrhœal diseases, the balance of 14 being due to other causes. In order to test whether my preconceived ideas as to the probable correlation of deaths from these causes with hereditary and environmental conditions was correct, I have taken the employment of the father and the home conditions as indices of heredity and environment. As everyone knows, there are, unfortunately, immense numbers of men at present out of work through no fault of their own, especially in Sheffield, but it seems a reasonable assumption that any man who has continued in skilled employment during such times as the present must be of a superior and intelligent type.

I have therefore divided the deaths between two classes as regards heredity—children of men in skilled employment and those of men out of work, engaged in relief work or unskilled labour. As regards environment I have made three classes according to the description of the home conditions—as good, fair, or slum. Table I. gives the percentages of deaths in each of these classes:—

TABLE I.

	Percentages.				
	Father.		Home conditions.		
	Class 1.	Class 2.	Good.	Fair.	Slum.
Congenital causes (23 deaths)	52·2	47·9	26·1	34·7	39·0
Respiratory diseases (39 deaths)	71·8	28·2	27·8	50·4	21·8
Diarrhœal diseases (24 deaths)	58·5	41·5	29·0	58·0	13·0

It will be seen that the presumed correlation works out fairly closely, the percentage of second-class parentage among children dying of congenital causes being very much greater than in children dying of respiratory disease, and considerably greater than in children dying of diarrhœal diseases. The percentage of slum conditions is also much greater among the congenital deaths, doubtless because slum conditions are very largely an index of parental degeneracy. The percentage of slum conditions among infants dying of diarrhœal diseases is surprisingly low, but this is accounted for by the fact that breast-feeding in Sheffield is the rule among the poorest classes, and the incidence of diarrhœa is therefore slightly higher in the class just above the lowest. The figures are, of course, small, but as far as they go I think the results show a definite correlation as expected between heredity, environment, and deaths from these three groups of diseases.

The next step in my inquiry was to compare the mortality from these three groups of diseases in a year of very high mortality, when infant welfare work had scarcely begun, with a year of very low mortality, when this work had been very highly organised for a considerable period. Table II. gives this comparison for the years 1901 and 1922.

TABLE II.—*Infantile Mortality (City of Sheffield) from all Causes and from Specified Causes grouped. Years 1901 and 1922.*

—	1901.		1922.		Percentage fall in mortality rate.
	No. of deaths.	Mortality per 1000 births.	No. of deaths.	Mortality per 1000 births.	
Prematurity ..	300		226		
Debility } Marasmus }	335	79 (39%)	88	37 (45%)	53
Congenital malformations	83		39		
Convulsions ..	292		50		
	1010		403		
Diarrhœal diseases }	706	55 (27%)	65	6 (7%)	89
Pneumonia ..	160	26 (13%)	114	22 (27%)	15
Bronchitis ..	169		119		
	329		233		
All causes ..	2573	202*	884	82	59

* The infantile mortality rate for 1901 (202) was the highest recorded since the year 1871.

Note.—The first woman inspector was appointed in 1899.

[2] Drapers' Company Research Mem., viii., 1911.

From this it will be seen that the percentage of the total mortality due to congenital causes has increased from 39 to 45; the percentage due to respiratory disease has increased from 13 to 27, while that due to diarrhœal diseases has fallen from 27 to 7. It is quite evident from these figures, and the greatly reduced birth-rate already referred to, that the reduction of the Sheffield infant mortality is mainly due not to the saving of the congenitally unfit, but to the virtual elimination of infantile diarrhœa, which has comparatively little to do with congenital conditions.

The next point to be considered is how far the negative correlation between infant mortality and child mortality shown by Snow's figures exists in Sheffield? Table III. shows the infant mortality rate, the mortality rate per 1000 births in the age period 1 to 5, and the general death-rate for various years between 1897 and 1922.

TABLE III.—*Infant Mortality Rate (City of Sheffield); Mortality Rate per 1000 Births amongst Children over 1 and under 5 years of age; and General Death-rate.*

Year.	Infant mortality rate.	Mortality rate per 1000 births ages 1–5 years.	General death-rate.
1897	196	94	21·2
1902	150	62	16·9
1907	145	87	17·1
1912	107	60	14·3
1917	104	61	14·6
1921	99	41	12·5
1922	82 = 41·9 %	44 = 46·8 %	11·7 = 55·2 %

From this it will be seen that while the infant mortality rate in 1922 is only 41·9 per cent. of the rate in 1897, the death-rate from 1 to 5 (calculated per 1000 births) has also fallen to 46·8 per cent. of what it was. These considerations appear to me to go far to justify our work as far as Sheffield is concerned, but I realise that the figures quoted are too small to serve as a basis for general statistical conclusions. My hope is that the problem may be attacked on somewhat similar lines by persons better fitted than myself to deal statistically with more extensive data.

At the same time I am entirely in agreement with the eugenic school that the heredity of all children coming under our care should as far as possible be studied. It is not practicable to refuse aid and comfort to the innocent victims of caro-genic unions, but it should be an essential part of child welfare work to seek for means of preventing such unions. I am also convinced of the seriousness of the population problem, of what Prof. Pearl has well described as "the impending saturation with human population of the portion of the earth's surface habitable by man."

But for the reasons given above I think it not impossible that a reduced rate of infant mortality may itself prove a factor in bringing about a desirable reduction in the birth-rate. I am convinced that in any case it is time that the thoughtless sentimental propaganda in favour of the unlimited production of babies, and their preservation whether fit or unfit to survive, should be sternly discouraged by all who take public health work seriously.

ROTARIAN PHARMACISTS.—A meeting of Rotarian pharmacists was held at the Hotel Great Central, London, on July 25th, Dr. Thomas Stephenson, of Edinburgh, in the chair, and the meeting was representative of all parts of the country. The chairman opened a brief discussion on Rotarianism as applied to pharmacy, pointing out the necessity of the promotion of friendly relations between the allied professions of medicine, dentistry, veterinary surgery, and chemistry. He further pointed out that the governing principle of Rotary—namely, service to the community—should be the basis of all work in pharmacy; if this principle were applied to many controversial questions it would be found that these questions were capable of easy solution.

VASOSTOMY FOR SEMINAL VESICULITIS,[1]

WITH A DESCRIPTION OF A NEW AND IMPROVED TECHNIQUE FOR THE OPERATION.

BY FRANK KIDD, M.CH. CAMB., F.R.C.S. ENG.,
LATE SURGEON TO THE LONDON HOSPITAL.

FOR many years it has been realised by those who are called upon to deal with a large number of cases of gonococcal urethritis occurring in the male that there is a certain type of case which will baffle all the ordinary methods of treatment. The majority of cases of chronic gonorrhœa in the male get well in the course of from four to six months' treatment if irrigations or instillations accompanied by prostatic massage are employed. Many cases also need dilatation of soft strictures with bougies and Kollmann's dilators, and some require urethroscopic destruction of infected follicles in the anterior urethra. In any large series of consecutive cases 99 out of every 100 can be cured in a reasonable time by such treatment. There will remain uncured a type of case which I call a "bugbear" case, and which may be described as follows. The history will be that the man has had constant relapsing attacks of gonococcal urethritis over several years. These attacks come on the day after going with a woman. Often adequate precautions have been taken against infection, yet urethritis at once occurs. Or the attacks may come on apparently spontaneously after an excessive drinking bout or after hunting or bicycling. The man often knows that he has not been really cured, and that he harbours lurking gonococci shut up somewhere or other. Between the attacks, when he appears to be free of urethritis, he may suffer from attacks of increased frequency of micturition accompanied by hazy urine and pain or discomfort felt in the perineum or beneath the last inch of the penis, or even in the abdomen, loins, or thighs. These attacks may be attended by fever and be ushered in with a rigor. Some of these patients develop a swelling of one epididymis every time they get an attack, a swelling which comes on at the same time as the urethral discharge, a feature which distinguishes the illness from an ordinary case of reinfection. A few of them complain of hæmaturia, usually a few drops of blood squeezed out at the end of micturition. Others complain of hæmatospermia, or in other words they notice after a nocturnal emission that their pyjamas are stained with blood. Many of these men suffer from severe neurasthenia, often accompanied by impotence or sterility.

Features Associated with Stubborn Cases.

On examination it is found that in the majority of such cases the urine passed is not clear, but shows a dull thin haze of pus of a peculiar and characteristic appearance diagnostic to the trained eye of vesiculitis. But the feature above all others which characterises these "bugbear" or stubborn relapsing cases is that examination of the rectum reveals a prominent, thickened, tender, swollen seminal vesicle on one or both sides. If the testicle has been swollen on one side, the swollen vesicle will usually be on the same side. Attempts to massage the vesicle with the prostate simply lead to the obtaining of a bead of prostatic fluid which is only mildly purulent. If both vesicles are blocked no spermatozoa and no large mucinous shadows characteristic of vesicular secretion will be seen under the microscope. After the massage the vesicle or vesicles feel just as full as before. In other words, the contents of the vesicle are shut off from the deep urethra, the mouth of the duct being blocked with inspissated secretion or by fibrous stricture. It is in such a closed vesicle that the gonococcus (or the colon bacillus or streptococcus) can live imprisoned for years, and from time to time spring to life under the influence of alcohol or excessive

[1] A paper read at the annual general meeting of the Medical Society for the Study of Venereal Diseases, July 20th, 1923.

venery or after a blow on the perineum. It then sets up an abscess which bursts into the deep urethra through a fortuitous opening which the pus digests for itself, and so leads to relapsing attacks of urethritis.

In exceptional cases most of these features are absent. The man lives for years happily married without a suspicion that anything is amiss, his wife remaining free from infection. His urine is clear and he has no symptoms. Suddenly one day after a drinking bout he develops an arthritis or an iritis, and a few days or even a few weeks later profuse yellow urethral discharge makes it appearance, containing abundant gonococci. In these cases can always be felt by rectal examination a large, hard, thickened seminal vesicle from which pus and gonococci can be expressed by massage. In the case of one doctor I have evidence that the gonococcus had lived thus imprisoned for 25 years. In another doctor it had lived for 13 years. In another case it had thus lived for 41 years and set up attacks of arthritis and iritis. In other words, when faced with a case of unexplained arthritis or iritis, do not rest content until you can exclude the possibility of a closed infected vesicle. Also, in cases of chronic relapsing fever you may find the cause in a closed vesicle infected with the colon bacillus. Case 7 had been treated for fever in the tropics for nine years without any success until I proved he had a chronic infection of one vesicle with the colon bacillus and cured him by vasostomy. There were two other similar cases in this series.

In the ordinary case of posterior urethritis, with or without epididymitis, one or both vesicles usually become infected. These react to, and recover under, prostatic (and vesicular) massage because the duct is not blocked and because massage gradually brings away purulent infected vesicular secretion, often in the form of purulent casts of the vesicle.

It became clear, then, that there were certain "bugbear" cases of chronic relapsing gonorrhœa (and also of chronic relapsing colon bacillus or streptococcus infection) which could not be cured by any measures which did not get at the closed focus in the vesicle and eradicate it. Fuller and his pupils in America taught that in these cases an incision should be made in the perineum, through which the vesicles should either be drained or else completely removed. This operation can be carried out by the technique devised and improved by Fuller, Alexander, Young, and others, but it is an operation of considerable technical difficulty. Unless an operator can obtain a long apprenticeship in this operation he is bound to have a number of unpleasant complications, such as urinary and recto-urethral fistula and urinary incontinence. It occurred to other urologists to try and catheterise the ejaculatory ducts through a posterior urethroscope and so wash out the vesicles. This has undoubtedly been effected in a certain number of cases, notably by Luys and Hugh Young. Nevertheless it is not possible to catheterise these ducts except in a few cases. In most cases failure is met with. In not a few the cannula is pushed into the perivesical tissues, abscesses are produced, and other unpleasant consequences follow. The procedure is also very painful for the patient.

Belfield's Operation.

It occurred to Belfield, of Chicago, to try and get at the vesicles from the other end. He published his first paper in 1905,[1] and since then has published many papers dealing with the subject. He proposed to cut down on the vas deferens in the groin or scrotum, free it, puncture it with a hollow needle, and inject medicating fluid into the vas, ampulla, and vesicle. Using silver salts he showed by X ray photographs that by such a procedure it was possible to fill the ampulla of the vas and also the vesicle completely with antiseptic fluid. He pointed out that the vesicle is really a simple sac, lined by a few layers of columnar epithelium. That it possesses no lacunæ or cryptic recesses such as characterise the anterior urethra. That the fibrous bands which break up its internal lumen are simple structures which seldom interfere in any way with the complete filling of the vesicle with fluid. The fluid when injected into the vas meets with the sphincter muscle which surrounds the mouth of the ejaculatory duct. It then regurgitates backwards up into the lumen of the vesicle and fills it completely. If, as is often the case in stubborn cases, the vesicle is filled with a cast of inspissated secretion, collargol or colloid silver softens and disintegrates this cast, and enables it thereby to be passed out of the vesicle during the course of a nocturnal emission. To Belfield belongs, then, the great credit of having established a new and effective principle in the treatment of these "bugbear" cases, and in the course of years he has improved the technique and enlarged the scope for the operation. I would point out what a deep debt urologists owe to Belfield for originating this new and vital principle. Not only does Belfield employ the operation for chronic resistant cases, but he now makes use of it in cases of recent acute vesiculitis accompanied by arthritis with marked success. Nevertheless I find that even with his improved technique the operation is not always an easy one, nor is it always possible to make sure of giving three wash-outs in the course of a week. As I hope to show, unless one can ensure three wash-outs in a week, one cannot hope to cure more than 80 per cent. of cases. For that reason I have worked at improving the technique, and I now describe a new type of operation whereby it is nearly always possible to obtain successful results. This is the object of my communication to-night. The operation is not easy, and I warn those who embark on it to read very carefully the minute details of technique described below.

[1] Jour. of the Amer. Med. Assoc., April 2nd, 1905.

The Improved Operation.

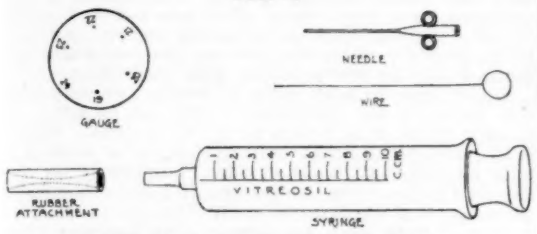
I shall first describe very briefly the history of the operation of vasostomy. Belfield tried cutting on the vas and washing out from above (vaso-puncture). He soon found that more than one wash was needed to effect unfailing cures, at the most two or three. He therefore tried slinging up the vas with a strip of rubber sheeting, dropping it back into the wound and fishing it up again every other day and re-puncturing it. This is the technique originally demonstrated to me at the London Hospital in 1914 by his pupil, Dr. R. H. Herbst of Chicago, and which I employed for some years. The rubber may cause sloughing of the vas, so I gave it up. I next tried his improved method. In this, after exposing the vas, he punctures it with a No. 23 gauge hollow needle, runs the needle along the canal for an inch, and then brings it out through vas and skin. He threads a strand of silkworm gut through the needle, removes the needle, and so has the vas slung to the skin with a strand of gut. He uses this strand as a guide for inserting the needle. I found that the solution used for lavage leaked around the puncture and irritated the tissues, so I gave this method up. Gradually and step by step I devised my present technique which I now describe, and it is as near perfect as I can at present make it. Nevertheless difficulties may still arise, and it is not easy to ensure that three washes shall be given in the course of six or seven days.

Technique.

The parts are shaved and the skin is disinfected with iodine. The operation can be done under local anæsthesia; nevertheless I usually employ a general anæsthetic (open ether), as I prefer to keep the patient in bed for five or six days. Pinch up the skin at the top of the scrotum on its outer side where the dartos muscle is absent, isolate the vas from the other structures of the cord, and hold it firmly in position with the fingers of the left hand immediately under the skin. Make an incision one inch long directly down to the vas till its white wall is clearly visible. Seize the vas with a pair of tenaculum gland forceps, and with a few strokes of the knife, free it from its loose outer coating of areolar tissue, until the handle of a scalpel can be pushed beneath it. The vas now lies spread out and stretched upon the handle of the knife. Note

that the vas must be stripped quite bare of all connective tissue before opening it, and take care not to cut the artery to the vas which runs along its posterior wall. With a fine sharp-pointed tenotome make a tiny incision into the lumen of the vas large enough to admit a hollow hypodermic needle. Having opened into its lumen insert a piece of silkworm gut and run it down for some 10 inches to make certain that the lumen has been entered freely and that the vas itself is not blocked. Remove the silkworm gut, remove the knife handle, and sling up the vas with a piece of boiled tape. Insert a special cannula[3] (see Fig. 1)

FIG. 1.



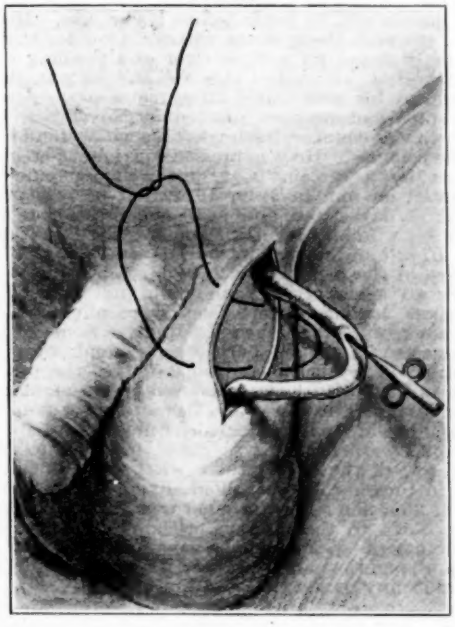
Syringe, attachment, gauge, needle, and wire.

gauge 19–23 according to the size of the vas. It is of the utmost importance not to use too large a cannula. If too large a cannula is inserted it will strip up the lining membrane of the vas and stultify the operation. On to the nose of the cannula fit a special rubber tip as designed and used for renal lavage (described by me in 1922[4]), and to this attach a vitreosil syringe containing a few c.cm. of sterilised warm water. Using counter pressure with the tape, gently press the piston of the syringe till the water is found to run easily into the vas. Now pack a little gauze beneath the vas to prevent colloid silver from falling on to the tissues. For some reason or other colloid silver causes no irritation to mucous membranes, but it causes great irritation and inflammation if allowed to fall on to or leak into connective tissue. Fill the syringe with 10 c.cm. of 5 per cent. colloid silver. Reattach it to the rubber nozzle, and, using counter pressure with the tape under the vas, gently press home the piston. The colloid silver will be found gradually to disappear into the vas and enter the vesicle. If 10 c.cm. are taken quite easily squirt in another 10 c.cm., and if this is taken easily even another 10 c.cm., till 30 c.cm. are taken. The larger the quantity of fluid used up to 30 c.cm. the better, if the vesicle is found willing to take it. If not, be content with 10 or 20 c.cm.

Remove the syringe and rubber cap and insert a wire down the cannula to keep it from getting blocked. Now comes the most important step in the operation. Insert a fine silkworm gut suture mattress-wise right through both sides of the skin and fascial incision and beneath the vas. Return it and pass it back again half an inch below through both layers of the skin and fascia likewise beneath the vas (see Fig. 2). Tie this suture, and thereby leave the vas slung up on a bed of connective tissue securely anchored at the level of the skin. Now fix each of the two rings provided on the cannula by means of a fine silkworm gut suture to the skin on each side. You now have the vas neatly slung up just beneath the skin and a cannula securely fitted in place ready for the next wash-out. I spray the little wound with a few drops of my malachite-green ethyl chloride spray to prevent wound sepsis and cover it with a sling of gauze which slings up also the testicles, cover with a T-bandage, and thread a piece of mackintosh over the penis to prevent soiling with urine. The patient's legs are bandaged together till he has come round from the anæsthetic. If both vesicles need lavage the operation is repeated on the opposite side. Sometimes the colloid silver is passed in the next few acts of micturition; sometimes it is not passed for several days. Belfield has record of a case where it was retained as long as 51 days without coming through. Sometimes it is passed as a black nocturnal emission a few days after the operation. In any case the vesicle can be felt by rectal examination to be distended with the wash, and its presence in the vesicle can be demonstrated by radiograms.

On the second day the wire guide is removed from the cannula, the syringe and rubber nozzle refitted, and a few drops of sterile water injected. If the injection runs freely, 10 c.cm. of colloid silver, 5 per cent., are then injected afresh. If the cannula is blocked and cannot be unblocked by means of the wire or by the injection of water, do not force colloid silver into the cannula. If you do so it will only leak backwards into the tissues and cause a painful nodule to develop.

FIG. 2.



Showing vas with cannula inserted and mattress suture passed and about to be tied so as to sling the vas just below the level of the skin edges.

In case of failure to get a second wash through, desist and take out the cannula. Usually a second wash goes through quite satisfactorily, the wire guide is reinserted, and a third wash is given on the fourth or fifth day, after which the cannula is removed. *When removing the cannula take out the silkworm gut slinging stitch and with the fingers manipulate the wound so as to loosen the adhesions round the vas and make it drop back into its proper position deeply in the scrotum.* This is a most important step. Unless this is done the vas may remain adherent to the skin wound and the opening persist as a spermatic fistula.

Results Obtained.

I shall now detail the results I have been able to obtain in 25 consecutive cases of vasostomy and the lessons I have learnt from them. Hitherto I have reserved the operation solely for "bugbear" cases, so that I have not had many cases for which the operation was necessary. I shall hope to obtain an increasing number of cases if I can persuade the profession that the operation is well worth while for fresh acute cases of vesiculitis with arthritis. I have notes of 25 cases

[3] These cannulæ are specially made for me by J. H. Montague, of 69, New Bond-street, and also the gauge for measuring their sizes. They are constructed so that a guide wire will pass easily either way, in contrast to the usual hypodermic needle where a wire will only pass one way owing to the method of construction. This is a very important point. They can also supply the syringe and special rubber nozzles (see Fig. 1). Colloid silver in strengths of 5 and 10 per cent. is specially made for me by Crookes Collosols, 22, Chenies-street, London, W.C.

[4] Brit. Med. Jour., 1922, i., 748.

operated on since 1914. All had long-persisting vesiculitis except one (Case 22), who had fairly recent joint trouble. In 21 cases the infecting organism was the gonococcus, in three the colon bacillus, in one a streptococcus, and in one of the colon bacillus cases a streptococcus as well.

The operation is one of great importance to married men in difficulties, or to men shortly about to marry and who are pressed for time as regards cure. Seven were already married. One had been married many years, yet his infection dated back to 1878, and he had relapses of iritis and arthritis in 1922 as a result. His wife had joint trouble too. One (Case 22) was married, had acute arthritis, and wanted to get back quickly to his wife. His joints were cured, and he went back to his wife in five weeks after the operation. One (Case 19) had a *B. coli* infection and never infected his wife. One (Case 17) had been abroad, where he became infected with the gonococcus. He returned to England early in 1920 and had to lie to his wife, yet refused vasostomy until the end of 1920, when he submitted to it. Within 21 days of his operation I proved he was cured, and he returned to his wife and had no further trouble. One (Case 13—a doctor) had gonorrhœa 13 years before I saw him. He had been married three years without trouble, then he suddenly flared up with a rigor and swelling of his right vesicle. I washed this out and he was able to return to his wife cured in three weeks. Another (Case 10) had become infected in November, 1920, while in this country, having left his wife behind in one of the colonies. He was pressed for time as he had to return by a certain boat and was not cured. I operated on him in July, 1921, and he was proved cured 14 days later, and just caught the boat fit to meet his wife on his return home. The last (Case 7) had *B. coli* and never infected his wife.

Five of the men (Cases 2, 9, 11, 15, 20) were in a hurry to get married, and could not put off the marriage arrangements. They were all cured in a few weeks and were married happily. Some of these cases were sterile as both vesicles and vasa were blocked. They became fertile after, as the passages were opened up. This was proved in several cases. In only one of the cases (Case 3) was the vas found full of semi-solid material, which made lavage very difficult, yet even he was cured by the procedure. In a few of the others there was some difficulty at first in pressing in the colloid silver, but in 23 cases out of 25 a fine silkworm gut thread could be passed right down to the ampulla without difficulty. The possibility of blockage of the vas must always be kept in mind, and the patient warned that if the condition is found it may render the operation ineffective.

I failed to obtain an immediate cure in four cases. In one (Case 4) the left side was completely blocked, so that this side could not be washed out at all, the right being satisfactory. He had iritis and joint trouble and I failed to cure him. The second (Case 6) had a partial block in the right vas. Only a little colloid silver could be forced through. It started drainage of the vesicle and massage effected a cure in another two months. The third (Case 23) developed a perivesicular abscess, which I had to drain through the perineum, and this led to complete cure. The fourth (Case 24) had iritis and joint trouble. The operation sterilised the vesicle, but a few months later he had another attack of iritis. This leads me to believe that iritis is in a different category to other gonococcal metastases. I believe that attenuated gonococci or their poisons get into the iris and live there indefinitely, so that it is not sufficient merely to sterilise the vesicle of gonococci to get a cure of iritis. I doubt if gonococcal iritis is ever cured—that is to say, rendered free from any possibility of relapse.

Twenty-one of the cases were immediately and effectively cured within three weeks of their operation. I think this is a most impressive statement, which fully justifies the operation for long-standing obstinate cases. The quickness of the results is little short of miraculous. These cases had all had many months, if not years, of the ordinary treatment by means of irrigation, massage, bougies, installations, drugs, and particularly vaccines, ordinary and detoxicated. Yet they had failed to obtain relief. The average length of time they had had the disease was four years, excluding the man who had had it 44 years, yet they were all cured in three weeks by vasostomy.

Seven of the cases suffered from obstinate and crippling arthritis. They were all cured in three weeks and their joint troubles simply melted away. Two had iritis. In one I failed to cure the vesicle because the vas was blocked, and in the other I cured the vesicle yet the iritis relapsed later. There were only two complications. In one a spermatic fistula persisted for a short time. This was before I learnt to drop the vas back after taking out the stitches. In another a perivesicular abscess developed which I drained through the perineum with good effect.

Should one do both sides as routine, or only that side on which the thickened vesicle can be felt? If in any doubt it is better to do both sides. Where it is quite obvious that only one side is at fault it is only necessary to do that side. I operated on one side in 11 cases with one failure, and on both sides in 14 cases, all of which were cured. The results are more certain if both sides are done. Five had one wash only, and four were cured; the other had to be finished by massage. Seven had two washes and all were cured. Twelve had three washes, ten were cured straight away, one developed a perivesicular abscess, and one failed because the left vas was blocked. One had four washes and was cured. I think it advisable to aim at three washes, though in most cases two washes will cure. *It is clear that a single wash will not cure all the cases; further washes must be ensured following on the operation.*

The colloid silver is often passed at the next few acts of micturition. Sometimes it is retained for days and is then usually passed in a nocturnal emission which stains the pyjamas black. That it fills the vesicles as well as the ampulla can be proved by radiography. The vas has a powerful sphincter, so that sperm or colloid silver coming down the vas regurgitates into the vesicle. The vesicle is certainly a reservoir of sperm. It is lined by a few layers of columnar epithelium which secrete a mucinous fluid. Colloid silver appears to have a softening action on inspissated secretion and plugs present in chronic vesiculitis. When the duct is blocked a fresh opening is formed into the deep urethra through which the softened contents are discharged. This can be seen with the posterior urethroscope. Numerous other antiseptic fluids have been tried, but I find there is nothing so satisfactory as colloid silver in strengths of 5 per cent. This is also my experience in the case of pelvic lavage for renal infections.

Two of the cases were suffering from *B. coli* vesiculitis, and had suffered for years from unexplained relapsing fever and rigors. Both these were cured. In one of these cases I also performed epididymectomy. Another had a mixed infection with *B. coli* and streptococcus and was cured. In two of the cases there were accompanying renal infections for which I had to wash out the kidneys. Each received two washes to both kidneys and were cured of their kidney infections.

Schedule of Cases.

CASE 1.—Chronic vesiculitis one year; vasostomy 1914, with help of Dr. Herbst at the London Hospital. Proved cured in three weeks.

CASE 2.—Seen May 26th, 1915; gonorrhœa six weeks. Right vesiculitis July 8th. Treated until Dec. 23rd, when it became latent. On Jan. 15th, 1917, after alcohol, relapse of urethritis from right vesicle. Right vasostomy Feb. 22nd, three washes. Proved cured in three weeks. August 1st, 1918, marriage tests negative. Patient then married, and was seen again Feb. 1st, 1923; his wife and children have had no trouble.

CASE 3.—April, 1917; gonorrhœa three years, treated for three months. Great enlargement of right vesicle. June 27th, 1917, right vasostomy, canal filled by semi-solid debris, two washes given. Needed further massage, but was cured in two months from the date of operation.

CASE 4.—March 17th, 1916; gonorrhœa 16 years, iritis, joints, both vesicles enlarged, left orchitis. On the 31st vasostomy, right side satisfactory, three washes, left vas blocked entirely, no fluid would go through. June 27th, still had iritis and the left vesicle was not cured.

CASE 5.—In 1918; three years' gonorrhœa, left orchitis, joints. Left vasostomy, three washes. Proved cured in three weeks, joints cleared up entirely.

CASE 6.—On Jan. 29th, 1920; six years' gonorrhœa, right orchitis, right vesicle enlarged. Treated by ordinary methods until Dec. 10th without effect. On the 22nd right vasostomy, one wash only. March 11th, 1921, proved cured.

CASE 7.—Oct. 12th, 1920; since 1911 had attacks of fever, increased frequency, pain in the perineum, called "malaria." Married two and a half months, two days fever and hæmaturia, right vesicle enormously enlarged, contained *B. coli* and staphylococcus. On the 17th right vasostomy, three washes. Complete black cast of vesicle passed after the third injection. On Nov. 8th urine clear, prostatic and vesicular fluid normal, no pus. Heard from later, has had no further trouble.

CASE 8.—On Nov. 10th, 1920; gonorrhœa eight months, right orchitis, right vesiculitis. Seen again March 2nd, 1921, when he had had three months more treatment, still right vesiculitis. On the 11th double vasostomy, one wash to each vesicle. On April 11th passed complete marriage tests; got married and had no trouble.

CASE 9.—July 14th, 1922; gonorrhœa two years, marriage in prospect. Urine clear, left vesicle immensely enlarged. August 8th, left vasostomy, three washes. On the 24th proved cured. Nov. 21st, again tested for marriage, and proved cured. Got married and had no trouble.

CASE 10.—Married, strange connexion November, 1920, not with wife since. Has had long treatment with failure to cure. Both vesicles enlarged. July 21st, 1920, double vasostomy, left side one wash, right side two washes. August 4th, 1921, proved cured and returned to wife, no trouble.

CASE 11.—July 25th, 1921; had had three years' treatment for infection of right vesicle with *B. coli* and streptococcus. Gets increased frequency, fever, and hazy urine. On the 28th double vasostomy, right two washes, left one wash. August 8th, urine clear, no increased frequency, prostatic fluid normal, vesicles normal. Had no further trouble.

CASE 12.—April 15th, 1921; for some years had had aching in left loin accompanied by fever. In February contracted gonorrhœa and had treatment from April to October without result. On Oct. 10th double vasostomy, two washes to each vesicle; this cured the vesicles. On the 31st left renal lavage, staphylococcal pyelitis. Pyelogram—double kidney, one ureter. Right kidney tested, found to be sterile. This cured the renal infection. In November urethral discharge reappeared containing gonococci. This was traced to a suburethral abscess in the perineum, excised Dec. 1st. This cured him. Writes December, 1922, to say he has had no further trouble whatever.

CASE 13.—Oct. 7th, 1921; 13 years ago had gonorrhœa for some months, then no trouble. Married three years ago, wife has had no trouble. Two weeks ago after drinking many cocktails great difficulty in micturition, rigor. Came up at once to be examined. Enormous swelling of right vesicle, water clear, no stricture. Massage of the vesicle produced pus and gonococci. On the 25th right vasostomy, three washes. Nov. 14th, passed marriage tests, proved cured and returned to wife. Since then no further trouble.

CASE 14.—March 21st, 1922; gonorrhœa nine months, treatment three months ago. Joints, left vesicle much enlarged. March 29th, 1922, left vasostomy, one wash. April 8th, passed marriage tests and proved cured. Got married, no trouble.

CASE 15.—Nov. 6th, 1922; gonorrhœa since 1918. Marriage in prospect. Has had arthritis, fever, wasting, hazy urine, both vesicles much enlarged. On the 13th double vasostomy, two washes. On the 24th appeared cured, had three marriage tests and got married; no trouble.

CASE 16.—Jan. 18th, 1921; six years' gonorrhœa, urine hazy, both vesicles much enlarged. On the 21st double vasostomy, two washes. Feb. 8th, urine clear, prostatic fluid absolutely healthy; on the 23rd had passed three marriage tests, no further trouble.

CASE 17.—May 25th, 1920; married, living in Tropics, wife at home. Developed gonorrhœa December, 1919, arthritis, vesiculitis. Treated by ordinary methods up to Nov. 10th, 1920, when gonococci were still found in profusion. Right vesicle much enlarged. On the 17th right vasostomy, two washes. By Dec. 19th had passed three marriage tests, went back to his wife and had no trouble.

CASE 18.—Jan. 31st, 1921; gonorrhœa since October, 1913. Urine hazy, right vesicle enormously enlarged, fluid expressed full of pus and gonococci. Severe neurasthenia, fears gonococcal infection of kidneys. April 7th, 1921, both ureters catheterised, urine from each kidney contained staphylococci but no gonococci. Kidneys washed out on several occasions, and by May 20th proved to be free of infection. Double vasostomy, three washes. The urine remained black for five days after the last wash. June 23rd, urine clear, no albumin, prostatic fluid absolutely healthy. Proved cured.

CASE 19.—Feb. 19th, 1920; since August, 1914, has had continual attacks of fever, increased frequency, pain in perineum, hæmatospermia. Right vesicle immensely enlarged and contained pus and *B. coli*. Prostatic massage relieved for a time, but in December, 1922, sharp relapse with high fever. On the 6th, right epididymectomy, needle stitched into right vas, left vasostomy. Three washes to each side. Since April, 1923, urine clear, prostatic fluid healthy, has had no more trouble.

CASE 20.—Jan. 23rd, 1920; for three years latent relapsing gonorrhœa which appeared to get well and then burst forth again. Urine hazy and right vesicle enlarged and containing pus and gonococci. Relapses Nov. 11th, 1920, August 2nd, 1922, and Dec. 14th, 1922. Persuaded to undergo vasostomy as marriage was in prospect. Jan. 8th, 1923, double vasostomy, three washes left side, two washes right side. By March 9th, 1923, had passed all marriage tests, and was proved cured. Got married, no further trouble.

CASE 21.—Jan. 14th, 1915; had gonorrhœa for two years, with three relapses. All the usual treatment had no effect, the right vesicle being much enlarged. On June 28th right vasostomy, four washes given. Seen August 4th, no treatment for one month, taken alcohol freely, urine clear, prostatic fluid absolutely healthy, cured. Seen again April 2nd, 1916; had had no further trouble.

CASE 22.—Oct. 9th, 1915; married ten years. Recently developed gonorrhœal right knee, left wrist acute synovitis, has had five injections of vaccine, joints still as bad as ever. Urine dense, hazy, left vesicle much enlarged, acute arthritis right knee and left wrist. Oct. 15th, double vasostomy, three washes to each side. Joint trouble completely disappeared in ten days after the first wash. Nov. 25th, proved cured and returned to his wife. Sept. 9th, 1916, wrote to say he is quite well and his wife has had no trouble.

CASE 23.—July 25th, 1914; three years' gonorrhœa, right vesicle. Had all the ordinary treatment until Oct. 18th, 1915; kept on relapsing from right vesicle. On the 20th right vasostomy, three washes. Nov. 2nd, perivesicular abscess developed. On the 3rd abscess opened by perirectal incision, urinary leak. Dec. 3rd, abscess and urinary leak had healed. Tested continually from the 16th to Jan. 1st, 1916, and proved to be cured. Has had no further trouble.

CASE 24.—Nov. 27th, 1922; aged 65, had gonorrhœa 1878, arthritis, iritis. Married 27 years, wife has had joint trouble for which she could not be examined. Has had relapsing iritis ever since 1878 and right orchitis. Both vesicles greatly enlarged, fluid expressed contained pus and gonococci. Urethra—multiple strictures. Dec. 18th, 1922, internal urethrotomy, double vasostomy, three washes to each. Jan. 6th, 1923, urine clear, prostatic and vesicular fluid absolutely healthy and contained no pus. Apparently cured of his vesicular infection. Nevertheless later on he developed another attack of iritis. There is a possibility he re-infected himself from his wife.

CASE 25.—May, 1914; gonorrhœa one year, married, in a hurry to get back to his wife. Right vasostomy, three washes, cured in three weeks.

Conclusions.

A seminal vesicle infected with the gonococcus or *B. coli*, or other germ, can remain blocked and full of the infecting agent for many years. The victim may suffer from relapsing fever and rigors, from relapsing urethral discharges, from arthritis or iritis, from impotence and sterility, and from neurasthenia. In some cases the neurasthenia is so severe as almost to amount to a psychosis. All these troubles, except the iritis, can be cured by vasostomy.

What, then, are the indications for this operation?

1. I think it is clearly established that it should be employed in all cases of chronic relapsing gonorrhœa (or *B. coli* or streptococcal vesiculitis) in which there is evidence of a thickened closed vesicle or vesicles, and in which four to six months' consecutive and careful treatment by massage, urethroscopy, and so forth, has failed to produce a cure.

2. It should also be used for cases of chronic arthritis with chronic relapsing epididymitis that do not yield to such treatment.

3. It should also be used for cases of relapsing attacks of fever, rigors, and pyuria, and epididymitis caused by the colon bacillus or other germs, such as streptococci.

4. Finally, I believe it should be used for many cases of severe arthritis in the early stages. Belfield has reported 83 cases of acute posterior urethritis with acute vesiculitis and arthritis, where immediate amelioration has been obtained by vasostomy. In the future I intend to try it for such cases.

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PARENCHYMATOUS HYPERTROPHY OF THE BREAST.

BY DUNCAN C. L. FITZWILLIAMS, C.M.G., M.D., CH.M. EDIN., F.R.C.S. ENG.,
SURGEON IN CHARGE OF OUT-PATIENTS, ST. MARY'S HOSPITAL; SURGEON, HOSPITAL FOR SICK CHILDREN, PADDINGTON GREEN.

HYPERTROPHY of the breast or parenchymatous hypertrophy of the breast is a remarkable phenomenon, most of the cases being so striking that they are either shown at a local medical society or reported in the press. Thus, in spite of its rarity, a great number of cases occur scattered throughout the literature.

A Case Described.

A married woman, aged 27, attended my out-patients' department at St. Mary's Hospital in the beginning of 1920, having been to many other hospitals previously.

History.—Her breasts had always been large as a girl, though nothing very remarkable. In 1918 she attended hospital and was informed that there was an adenoma in the right breast; she was admitted and the adenoma removed. Later she married, and she was now two months pregnant.

Condition on Examination.—Both breasts were very large, the left being the larger, while the right appears to have had a large piece removed from the upper and outer quadrant, where there is a scar. (See drawing.) The veins were enormously distended, the nipples quite flattened and flush with the skin, the areola enlarged and deeply pigmented. The breasts were very nodular and lumpy and felt as if they were full of large adenomata. She had been advised to have her breasts removed.

Treatment.—She was sent to Dr. Harrison Orton for X ray treatment which had very little effect, and the increase in size went on. At the fifth month of her pregnancy she aborted and the breasts rapidly diminished in size. In January, 1923, the breasts were still large and very pendulous, especially the left one; both were flabby and soft, the lumpiness could still be felt, and the veins were still prominent. She had not been pregnant again, her menstruation had always been normal, but lately had been painful.

Nomenclature.

The condition has been known under many and varying names, such as "virginal hypertrophy," "massive hypertrophy," "diffuse hypertrophy," and lately Dr. David M. Greig has introduced the term "puberal hypertrophy." All these terms indicate the increased size of the breast, and some, such as "virginal" and "puberal," attempt to combine some other characteristic of the condition in the name. The term virginal is inaccurate, as the condition has nothing to do with virginity, while puberal rather confines it to puberty, whereas some of the best marked cases occur in early married life. Greig, who uses this term, subdivides it again into hypertrophy of puberty and hypertrophy of the puerperium; this again is inaccurate, as it is during pregnancy that the enlargement takes place, and during the puerperium that there is often a return to the normal. No doubt under this term are included cases which are not really true hypertrophies. Very obese individuals may have enormous breasts in no way pathological, but merely due to large collections of fat. Even young people can be afflicted in this manner, as in one of Keyser's cases, where the girl was only 19 years of age. In some cases chronic interstitial mastitis may increase the bulk of the organs sufficiently for them to be included in the term hypertrophy. Some cases in people over 40 years of age are of this nature. In many cases, as we shall see, there is a mistake in diagnosis; it is probable that cases of acute cancer have been

Drawing showing enlargement of the breasts.

included, and certainly many cases with large and rapidly growing lipomata or adenomata, and perhaps even elephantiasis.

Some writers exclude from the category of true hypertrophy all cases in married women where there is a permanent enlargement associated with pregnancy, but I cannot understand why. In true cases we get a real hypertrophy, all the tissues of the breast taking part in the enlargement. For these reasons I have preferred the term parenchymatous hypertrophy of the breast, as that accurately describes the condition at whatever time of life it occurs. The term parenchymatous was also employed by Durston in 1669 when describing the post-mortem appearance in the earliest case on record. The condition has also been described as occurring in men, but in them the disease seems so essentially different, whatever the form of gynæcomastia met with, that I do not include them.

Cause and Ætiology.

The cause of the disease is quite unknown. Trauma, cold, heat, and irritation have no effect; celibacy and heredity have no influence. The breast being one of the organs necessary to complete the process of generation, the association between it and the other sexual organs has long been recognised, and in this disease the association is emphasised. Two facts stand out clearly. The enlargement of the breasts begin first at or about the age of puberty, and, secondly, during pregnancy. Obviously, therefore, it must have something to do with the other sexual organs or sexual secretions, but what this association is we do not know. There are only two cases on record with any known organic disease in the organs of generation—Bartel's case, where a girl of 14 had an infantile uterus and very small ovaries, and Gran's case, where a girl of 15 had tuberculosis of the lungs and ovaries. The modern view is that the condition is due to a hormone or lack of, or excess of, a hormone, secreted by part of the sexual apparatus, which means that very little is yet known about it. The great stumbling-block to the hormone theory is the fact that sometimes the

condition is unilateral. Of the 185 cases within my knowledge 145 were bilateral, and only 40 unilateral. It is interesting to note that when accessory breasts were present, as in Warren's case, all the breasts partook of the enlargement. Any general stimulus to mammary growth should affect both breasts, and its influence should not be restricted to one side. Unilateral cases, however, are not an insuperable obstacle to the acceptance of the hormone theory. We know that hormones and enzymes often act by liberating other substances which then act directly on the tissues. If that other substance were present in one organ and absent from the other the hypertrophy might occur only on one side. This would also help to explain such extraordinary occurrences as that reported by Young of four sisters who all had families, but none of the four had any milk in the left breast.

Sometimes a parenchymatous enlargement of the thyroid gland in a young girl comes on at puberty, but part of the thyroid gland may remain unaffected. I believe these conditions are analogous, the more so in that enlargement of the thyroid gland sometimes comes on during pregnancy. Moreover, parenchymatous hypertrophy of the breast very commonly starts at the time of puberty. In most patients who have menstruated, menstruation has ceased before hypertrophy is noted. In others, after the breasts have attained a certain size, menstruation has ceased; in one case the growth stopped with the cessation of menstruation. Hutchinson reported a case which preceded the onset of menstruation. There is, therefore, usually some irregularity of menstruation which either precedes or accompanies the change. Pregnancy is a powerful stimulant to mammary growth normally, and sometimes this increase in size may pass the physiological bounds. In these cases the conclusion of pregnancy often permits the breasts to return to normal. Monod reported a case where the breasts became enormous at three consecutive pregnancies, but returned to normal in the intervals. Rosinski had a case in whom this process was repeated four times.

The rate of growth is, as a rule, slow, and sometimes intermittent, though in Zarukow's patient only two and a half months were needed for the breasts to reach a circumference of 57 and 59 cm. In the earliest case of which we have records, that reported by Durston by letter to the Royal Society in 1700, the condition was said to have occurred in one night. This case, however, occurred at a time when imagination played a greater part in medicine than it does now, and probably the lady suddenly awoke to the fact that her breasts were much larger than they should have been. The case was as follows:—

> Eliz. Trevers, aged 23, "fair of complexion, brown haired, of an healthy constitution, low of stature, of honest repute, but of mean and poor parentage." This lady was said to have woken up one morning to find her breasts so large that she could not turn or even sit up in bed. Menstruation had stopped some six months previously. Within the short space of two months the skin gave way and ulcers formed and she died a month later of septicæmia. A limited post-mortem examination was allowed; the left breast weighed 64 pounds, and the right one 40, the left one was 3 feet 4½ inches in circumference. "Upon opening it we could find neither water nor cancerous humours, nor anything vitious, more than the prodigious bigness, and the tubuli, and parenchymatous flesh were purely white and solid, and no other than what we see in the soundest breasts of women, or the best udders of other animals."

Other cases which have reached enormous proportions may be mentioned:—

Hamilton	.. ..	right 27½ lb.;		left 24½ lb.	
Owen	.. ..	,, 22	,,	,, 23¾	,,
Robert and Amusat		,, 30½	,,	,, 20½	,,
Dennis and Billings		,, 18	,,	,, 18	,,
Huston	.. ..	,, 12	,,	,, 20	,,

Porter, the breasts weighed 40 lb. between them.

A table drawn up according to the age at which the condition was known to occur is very striking. In 161 cases in which the age was mentioned the figures are as follows.

Between the ages of	11	and	15	there were	43	93	143
,,	,,		15	,,	20	,,	50		
,,	,,		21	,,	25	,,	26		
,,	,,		26	,,	30	,,	24	76	
,,	,,		31	,,	35	,,	11		26
,,	,,		36	,,	40	,,	8		
,,	,,		41	,,	45	,,	5		
Over this age	..	..			48	,,	2		

Here we see there are 93 cases of 20 years and under, and 76 over this age, there were 143 cases under 30 and only 26 cases above this age—that is to say, the great majority of cases occur during the age of greatest sexual development and the numbers become progressively fewer as age advances. After the age of 30 the falling-off of the cases is remarkable. The youngest case mentioned as having a great enlargement was 12, though a small one is mentioned at the age of 11. Of the two at the age of 48, one, from the account, was possibly due to a tumour and not to hypertrophy.

Symptoms.

Apart from the increase in the size of the breasts there are no symptoms. The breasts increase in size and still retain their rounded contour, though this may be irregular and bulgings occur in places. The skin over the breast is quite movable and at first apparently normal, though enormous striæ appear in it as the result of its stretching. The veins are distended and clearly seen coursing under the skin. In some cases the breasts are much engorged and of a dusky hue. Durston, Billroth, Simpson, Greig, and others have noticed that the stretched skin has given way and ulceration has taken place. When this occurs, necrosis of the underlying breast tissue usually follows, with septicæmia and death, as happened in all these four cases. McGavin's case was four months pregnant and the breast enlargement was "accompanied by diffuse inflammation," and the breasts "were hot, red, tender, dusky, nodular, long, and pendulous." Abortion was induced, followed later by amputation of the breasts and recovery.

The nipple as a rule becomes flattened out and flush with the surface, and is quite useless for suckling. At the same time the areola becomes much enlarged; it may fade and be difficult to see in non-pregnant patients, but usually becomes darker and more pigmented than normal in pregnant ones. Often the breast feels nodular and irregular, and more like a lactating breast, or even as if it were full of small adenomata; this, as we shall see later, has led to a false idea of the pathology of the disease. In the case under my care, I believe the nodulation was sufficiently well marked to be mistaken for an adenoma and was removed before the general enlargement was sufficient to attract attention to the true nature of the disease. There is no pain experienced during the increase in size, and except for the irksomeness of carrying the large organs about, there is no inconvenience. Porter has reported a case where the breasts were so large and their weight so oppressive that the patient had a frame made to support them on as she lay in bed. Ehrenhaus recorded a case which experienced a good deal of pain, but she also suffered from galactorrhœa, and often a quart of milk escaped from the enlarged glands in 24 hours. After a time the weight of the breasts tends to draw them away from the chest wall, and they hang as by a pedicle. In young girls, where one breast is larger than the other, spinal curvature may be caused by the unequal weight; this was so in Menteil and Benôit's girl of 14½, and also in the false case in a girl of 15 under Mr. Ernest Lane, reported later on in this article.

Pathology.

In cases of true hypertrophy the condition is a parenchymatous enlargement of the glands, all the component tissues taking a share. In a few cases described as hypertrophy the increase in size has been found to be a great deposit of fat, but here there would not be the nodular feel which has been described in the true cases. In the post-mortem

examination of the case reported by Greig, which was conducted by Prof. L. R. Sutherland, the report was shortly as follows :—

"To the naked eye the condition seemed unusual. Seems to be generalised hypertrophy, with glandular hyperplasia in nodular form. General appearance suggests benign lesion. Microscopical examination showed the structure mainly fibrous, with gland spaces filled with altered epithelium." Greig continues "that the peculiar shedding of the epithelium into the gland spaces and ducts was as is found in some cases of great glandular activity. The distension so produced, together with the decided glandular hyperplasia, brought about a sort of nodular formation of gland tissue, suggestive of, but in no way of the nature of adenomata."

This last sentence is significant as there is an idea current that the condition is fibro-adenomatous, and at a meeting of the Royal Society of Medicine, where a case of hypertrophy of the breasts was shown, two speakers of eminence declared the condition to be "fibro-adenomatous." If by this term they meant that the enlargement was due to the development of fibro-adenomata, I can only say that such is not the fact, no case having been so reported after investigation. Billroth's description on post-mortem examination on one of his cases was as follows :—

"The cross section of the mamma resembled that of a uterus studded with numerous fibromata, but the tumours were softer and contained more juice than ordinary uterine fibrous tumours."

This evidently refers to the nodules described by Prof. Sutherland. Neither Billroth nor Sutherland thought the nodules resembled fibro-adenomata. If, on the other hand, the speakers meant that the fibrous and adenomatous elements of the glands were enlarged, they should also include the fatty tissues, and the condition becomes parenchymatous. If they spoke of a parenchymatous change, then the term fibro-adenomatous had better disappear in connexion with the disease, as it is the term intimately associated with the common fibro-epithelial tumour of the breast.

Diagnosis.

This would seem so obvious that it need not be dilated upon, but this supposed ease of diagnosis has sometimes been very detrimental to the patient. We find many cases recorded in which the breast has been removed, and to the astonishment of the operator the condition has proved quite different from that expected. Surgeons of the highest eminence have been deceived. Thus Billroth removed what was thought to be a case of unilateral hypertrophy and found that it was a huge retro-mammary lipoma. Brodie very nearly did the same thing. It is especially necessary to be careful in unilateral cases. Greig does not believe that unilateral cases can occur, and thinks they are always due to causes other than pure hypertrophy; while not agreeing with him, I would urge special caution in dealing with them.

The following is an example :—

A girl, aged 15, was admitted to St. Mary's Hospital under Mr. Ernest Lane on March 18th, 1905, for hypertrophy of the right breast.

History.—In January, 1904, the right breast was noticed to be larger than the left, and it has gradually grown since that time. There was no pain till about six weeks ago, since when there has been a slight aching. She had had to wear the breast in a suspender. She began to menstruate when 14 years old, a little irregularly at first but now regularly. During the periods the breast always swelled perceptibly.

Condition on Admission.—The patient looked well and had a good colour. The right breast was much larger than the left and hung down to within an inch of the umbilicus. The veins over it were enlarged and the nipple flattened. The breast felt full of hard masses from the size of a walnut to that of a hen's egg; it felt very heavy for its size. There were two hard glands in the axilla. The right labium majus was the same size as the left.

Operation.—The breast was removed by an incision round its base. It weighed over 3 lb. after the fluid had run from it, was hard and lumpy to the feel, but contained no cysts.

Microscopical Examination.—The tumour was an adenoma, and the drawing which accompanied the account showed the thin flattened out breast, underneath which lay a large adenoma.

Hoenigsberger illustrates a similar case in which the enlargement was due to enormous bilateral fibro-adenomata. Muchanoff illustrates an equally extraordinary case. The appreciation of these mistakes may have had something to do with the supposition that true parenchymatous hypertrophy was due to fibro-adenomata. Deaver and McFarland give an excellent illustration of a case of apparent symmetrical hypertrophy due to bilateral lipomata. There is a possibility, too, of mistaking elephantiasis of the breasts for hypertrophy in those who have been to the East; Manson illustrates a case in which, however, the diagnosis was rendered easy by the fact that the left leg was affected as well. These mistakes having been recorded, we may be quite sure that there are others in which the perpetrator has not been quite so frank. It is just as well, therefore, to draw attention to the fact that unless care be taken mistakes can be made as easily in this disease as in any other.

Treatment.

There are sufficient cases recorded in which the condition improved owing to some change in the sexual influence, such as menstruation ceasing, pregnancy commencing, or, more frequently, pregnancy ending, to warrant a waiting policy being adopted at the outset. Some observers think that these are not cases of true hypertrophy simply because they get well of themselves, but as we know really so little of the true cause of the disease this opinion seems to be hardly warranted. Local measures such as pressure and massage may be tried, potassium iodide or collosol iodine may be given as an alternative, but none of them have much effect. Mammary extract has been administered without result. One would rather expect that extract of the uterus, ovaries, or corpus luteum, or a mixture of them might have a better effect. In one case I tried a course of X rays which the patient declared had no effect, and probably the conclusion of the pregnancy was the real cause of the return to normal.

When the breasts are not so enormous as to impede movement it is best to counsel patience, especially in young girls. In some patients, however, the general health suffers severely, either from the disease or from anxiety, worry, and self-consciousness, and in these cases operation should be advised. It is remarkable with what unanimity all writers record the fact that the general health improves immediately after the removal of the breasts. Where the breast increases in size during pregnancy and diminishes after parturition, the patient must make her choice. Usually the breast is useless for suckling as the nipple has disappeared; in Zarukow's, Menteil's and Benoit's cases, to mention only two, the breasts were functionless after parturition. It is for the patient to decide whether she will retain these enormous but useless appendages, which are often very much in the way, merely for sentimental reasons.

In all cases where the breasts are becoming unduly dusky, congested, or inflamed, or where the skin threatens to give way, amputation should be performed without delay.

The operation is easy, a visible scar can quite well be avoided, and the disease is cured at once. In bilateral cases one breast should be amputated, and after an interval of three weeks or more the second breast can be dealt with. The existence of pregnancy seems no bar to the operation, which is remarkably free from shock. In amputation of the breast it is advisable that this be carried out by two flaps, a large flap cut from the front of the breast and a small one fashioned from below. When the breast is removed the large anterior flap can be sewn into the position of the normal costo-mammary groove. If a certain amount of the breast tissue be left a very fair breast can be reproduced; it will have no nipple, but the appearance will be quite presentable, and there will not be the disfigurement usually left by such operations.

(*Continued at foot of next column.*)

THE DIGESTIVE FUNCTION IN PULMONARY TUBERCULOSIS.

BY J. GORDON HISLOP, M.B., CH.B. MELB., M.R.C.P. LOND.,

LATE HOUSE PHYSICIAN, BROMPTON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST; LATE MEDICAL REGISTRAR, MANCHESTER ROYAL INFIRMARY.

THAT every phthisical patient has been, is, or will become, a dyspeptic is probably the most definite statement to be found in the literature of pulmonary tuberculosis.[1] Not only will he be afflicted with indigestion, but constipation with intermittent attacks of diarrhœa and abdominal pain will add to his difficulties. In not a few cases this almost inevitable disturbance of digestive function causes more discomfort and disability than do the symptoms directly referable to the lung condition. Daremberg said, "l'estomac est la place forte des phtisiques et l'alimentation leur grand moyen de défense."[2] It still remains, to-day, a desirable part of the treatment of pulmonary tuberculosis—if only from the point of view of the patient's comfort—to safeguard this bulwark of defence. More rational methods of dieting have replaced the excessive feeding insisted upon by Walther,[3] and the stereotyped prescription of milk in large quantities is gradually ceasing to be a fetish, but the most suitable diet will be given only when the true nature of the alimentary derangement becomes known.

Hyperchlorhydria Probably Fortuitous.

Hyperchlorhydria and hypochlorhydria have been reported with equal frequency, Fishberg stating that "analyses of the gastric contents have not revealed any constant changes."[4] From the findings in fractional gastric meals and the results obtained by treating a still larger number of cases according to the conclusions derived, it would appear that hypochlorhydria or hyposecretion is the rule when dyspepsia is the sequel of infection of the lungs by tubercle bacilli. Quite a number of phthisical patients have had hyperchlorhydria for many years prior to their becoming tuberculous, and consequently their indigestion bears little or no relation to their lung condition; I would suggest that these cases may have formed the majority of the cases of hyperchlorhydria that have been reported. One patient, who had had a gastro-enterostomy for ulcer performed two years previously with but temporary relief, stated that her indigestion became less severe when her chest began to trouble her. This history is not uncommon where the dyspepsia has been of long standing, but it must not be confused with a similar history obtained in cases of gastric mode of onset in which the dyspeptic symptoms become less marked as the pulmonary symptoms appear. It should also be remembered in this connexion that hypersecretion may be present without symptoms in an otherwise normal subject.[5]

(*Continued from previous column.*)

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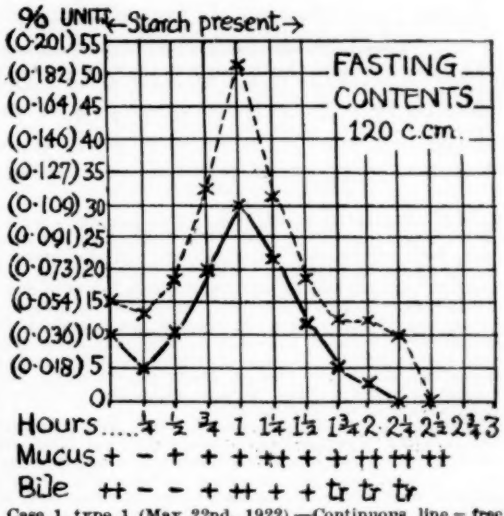
It is suggested, then, that the usual effect of tuberculosis in the digestive function is one of inhibition, the quality and quantity of the gastric secretion depending on (1) the degree of inhibition, and (2) the quality and quantity of the secretion prior to the tuberculous onset.

Illustrative Cases.

The charts obtained in these cases of hypochlorhydria are of two types. The first, as exemplified in Case 1, shows reduced acidity, though 30 units are usually established, and rapid emptying of the stomach. The indigestion in these instances is never severe and readily yields to treatment directed at the stimulation of gastric secretion. Hunger pain coming on two hours or more after a meal is the predominant symptom, which is temporarily relieved by the ingestion of food. This type is uncommon, and at present it is difficult to say whether it is the result of slight inhibition or only an early stage of the second variety.

CASE 1.—(First type, Chart 1.) The patient, a male aged 57, was admitted complaining of cough for past two years. Sixteen years previously he had a slight hæmoptysis, after which he became subject to coughs and colds. Two brothers died of pulmonary tuberculosis, aged 29 and 31. Three months prior to examination the patient's appetite failed, and he began to feel worse. Epigastric pain occurred between one hour and one and a half hours after meals, and continued until the next intake of food, which usually, though not always, relieved the symptom. No history of vomiting was obtained, but nausea coming on at the same time as the pain was complained of. Constipation had been obstinate during these months.

CHART 1.



Case 1, type 1 (May 22nd, 1922).—Continuous line = free acid curve; dotted line = total acidity curve; tr. = trace.

Abdominal Examination.—This proved negative, save for the detection of a slight epigastric fullness and tenderness on the left iliac fossa.

Chest Condition.—Marked fibrosis of the right upper lobe with infiltration of the middle and lower lobes of the same side. The left upper lobe was also infiltrated. Rhonchi were heard extensively over the chest.

Radiological Report.—Stomach slightly low, but tonic vigorous peristalsis. No filling defects or spasmodic contraction. Duodenal cap normal. Six hours after ingestion the stomach is empty and the food occupies the terminal coils of small intestine, cæcum, and ascending colon.

The second type of chart, as shown in Cases 2 and 3, is much more common, and forms the basis of this communication.

CASE 2.—(Second type, Chart 2.) The patient, a male, aged 36, was admitted on April 4th, 1922, with very extensive tuberculous lesions of both lungs, with a cavity in the right upper lobe. Whilst at a sanatorium in the south of

England in the preceding November he first became subject to indigestion, which commenced as a feeling of fullness after the evening meal. About January, 1922, the condition became worse, flatulence occurring after each meal and at nights. Had never had any actual pain or vomiting and only two short attacks of slight diarrhœa.

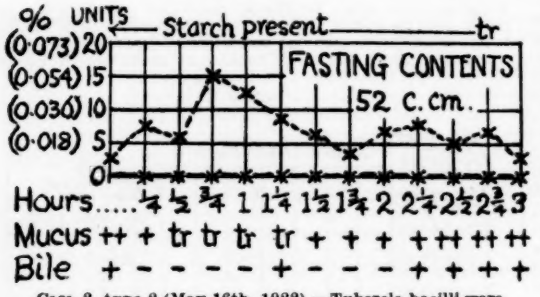
Whilst under observation it was noted that the flatulence continued for about one hour after each meal, but that the patient would be awake for two hours each night (between 12 and 3 A.M.) on account of eructations and the passage of flatus. Fish, eggs and milk, and fat of all kinds seemed to aggravate the condition.

On May 17th, 1922, the acid mixture and dimol were first administered, and one month later, immediately prior to transfer to sanatorium, all symptoms had abated. After transfer the condition recurred, but when the same lines of treatment were used the symptoms again diminished, but the patient died on August 3rd from tuberculous meningitis.

I am indebted to Dr. Frederick Heaf, of Colindale Hospital, for the post-mortem findings from which I quote:

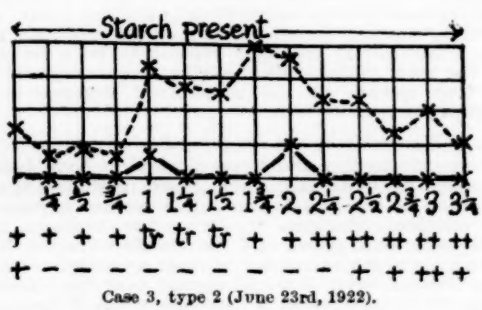
"There was extensive tubercular enteritis and appendicitis with large abdominal glands. The mucous membrane of the stomach was swollen, and there were many small submucous hæmorrhages, giving a very congested appearance to the surface, particularly toward the cardiac end."

CHART 2.



Case 2, type 2 (May 16th, 1922).—Tubercle bacilli were found in the fasting contents.

CHART 3.



Case 3, type 2 (June 23rd, 1922).

CASE 3.—(Second type, Chart 3.) The patient, a female aged 27, was admitted on Feb. 27th, 1922, with left-sided disease, and complaining of palpitation and sleeplessness. A left artificial pneumothorax was induced on March 3rd. Incomplete collapse was effected, and a pressure of +8 cm. of water maintained in the hope of increasing the degree of collapse, but as the palpitation became more marked the pressures were lowered to +1. As the palpitation continued, compelling the patient to remain in bed, a gastric examination was made, though dyspeptic symptoms had not been a marked feature. Refills, which had been given weekly, were stopped on June 8th.

The fasting contents measured 45 c.cm., and contained a few sarcinæ. Fillings were resumed on June 30th, the palpitation having diminished in severity after the administration of acid and an intestinal disinfectant. Gastric treatment was continued for about two months, and, at the time of writing, she is now up all day, working on second grade for two hours each afternoon and having refills with an end pressure of 1½ cm. water every ten days. There have been no attacks of palpitation during the last eight weeks.

Symptoms.

The following symptoms are noted in association with the second type of chart (Charts 2 and 3).

(1) *Flatulence.*—This occurs from a quarter to half an hour after meals, and whilst of short duration in the morning and mid-day becomes marked after the afternoon and evening meals. In the more severe cases flatulence accompanied by intestinal flatus occurs towards midnight, or the early hours of the morning, about five or six hours after the last intake of food. One case—the most severe in our series—lost two to five hours sleep each night on this account.

(2) *Pain.*—When questioned the patient will describe a feeling of "fullness" or "tightness" rather than actual pain. After meals the "tightness" is more or less restricted to the epigastrium, and is relieved by eructations, whilst at night it becomes more generalised, and is relieved by the passage of flatus.

(3) *Nausea.*—May be constant or may come on at the sight of food, during, or immediately after a meal; the latter time being commonest. It is never intense, but is probably the earliest symptom of which complaint is made.

(4) *Vomiting.*—This is never a marked feature, and when it does occur is usually the climax of an attack of coughing, or is the result of irritation of a lesion of the pharynx or larynx during swallowing. Morning vomiting occurs in a few instances from time to time, but the attacks rarely last longer than one week.

Intolerance of Fats.

The main feature is the intolerance of fats alone or in a mixed diet. Whilst some patients state that they cannot take fat of any description since it increases their indigestion, the majority find less inconvenience if they take their fats alone rather than mixed with proteins. Soups are often avoided by them because of the fat, and fat is cut off bacon unless it be crisp, whilst milk or milk and egg is felt to increase the symptoms. Cod-liver oil and malt and milk are disliked by the majority of tuberculous subjects, and almost universally by them if their dyspepsia is marked, but numbers take both, though they disagree, simply on account of medical advice.

Clinical Examination.

Examination of the abdomen in early stages often proves negative. In the later stages, however, the stomach is more often dilated, though succussion is not common, whilst the cæcum is almost invariably dilated, and splashing is easily elicited. The colon is frequently palpable as a hard tender band in the left iliac fossa, the tenderness being most marked in long-standing cases with chronic constipation. Epigastric tenderness, if present, is slight, and hyperæsthesia seldom, if ever, present.

Gastric Analysis.

(1) *Resting Gastric Contents.*—This varies from 25 to about 75 c.cm., but owing to the quantity of mucus present it is difficult to be certain that the stomach has been emptied. In one case it was impossible to obtain more than a few cubic centimetres, though the tube was withdrawn and cleaned three times, whereupon the examination was abandoned. Micro-organisms—staphylococci and streptococci—are often present in greater numbers than would be likely to result from contamination. Lymphocytes are commonly found in cases where the chest condition is advanced and the amount of sputum considerable. The amount of bile varies considerably.

(2) *Acidity, &c.*—The free acid may be absent, present in small amounts at intervals, or constantly present, but reduced in amount, the total acidity then following the free acid curve. Thirty units, or 0·1 per cent., is seldom established. Starch is still present after a gruel meal at the end of three hours or longer. Bile is rarely present before two and a quarter hours after the test-meal has been given. Mucus—both mixed and free—is present in con-

siderable quantities, and increases in amount towards the end of the examination, but there seems to be little relation between the amount present and the severity of the symptoms.

General Inhibition of Alimentary Function.

The symptoms and clinical findings point to a general inhibition of alimentary function. The tongue is usually dry and furred as a result of constipation; the unpleasant taste in the mouth, to which this condition gives rise, tends to increase the anorexia and intensify the distaste for food, which in turn inhibits the salivary secretion, thus completing a vicious circle. Owing to the dryness of the mouth, particles of food will adhere to the teeth, undergo bacterial decomposition, and give rise to dental caries and fermentation. In the absence or diminution of free acid, the gastric secretion loses its bactericidal properties and the digestion of proteins is incomplete, so that the protein derivatives undergo bacterial decomposition in the intestine. The greater amount of this contaminated saliva swallowed at night will tend to increase the bacterial decomposition, and so the more severe flatulence and the nocturnal occurrence of distension and flatus are explained. The intolerance of fats is possibly due to their favouring this decomposition by their tendency to form a film over the proteins, which are thus prevented from coming into contact with what little acid may be present. Fats also seem to have the power of lessening the secretion of acid or of lengthening the time taken by the stomach to empty itself.

The result of this continued distension and irritation of the intestine may be, at first, increased peristalsis with diarrhœa, but will ultimately be general stasis with constipation. As the intestinal contents remain longer in the cæcum than elsewhere, it is only to be expected that this viscus would be considerably affected, dilatation being usual. As is so frequent when the tone of the cæcum is diminished, a "greedy colon" is present, and this gives rise to a hard dry stool.

In the absence of the maximum peristalsis of the stomach, which only occurs when the free acid reaches 30 units,[6] and with the delay in the regurgitation of bile and the presence of a dilated cæcum, it is not unreasonable to suppose that the ileo-cæcal valve is incompetent and fails to respond to its normal activator, the entry of food into the empty stomach. Each of these defects will tend to increase the loss of tone of the whole alimentary tract. Whether the diminution of the free acid is the direct result of the presence of tubercle bacilli in the stomach, or is the result of toxæmia, is uncertain, and while Rehfuss has, in many cases, found the bacilli in the fasting contents with greater ease than in the expectoration,[7] and the writer has found them in more advanced cases, it is more reasonable to suppose the toxæmia to be the cause. It seems apparent, however, that the diminution of the acid is the key to the ensuing disturbance of the whole alimentary tract.

Treatment.

(1) The mouth and teeth should be kept clean by an acid mouth-wash used each night and morning. All carious teeth should receive attention. It is essential that no particles of food should remain in the mouth after the evening meal.

(2) Acid. nitrohydrochlor. dil. should be given in doses of 10–30 minims before or during each meal. This helps to make up the deficiency in the gastric sècretion and to increase its bactericidal properties. In most cases sodium bicarbonate taken before meals will excite secretion, but in the dyspepsia of tuberculosis—with the possible exception of type 1—it seems as if this stimulation is insufficient. The acid is, however, a definite stimulant to the salivary secretion, and this latter action may be increased by combining it with the infusions of gentian, calumba, or quassia. Glycerine pepsin may be added, for although it is held that pepsin is rarely, if ever, diminished to any appreciable extent, hyposecretion is so often coincident with hypochlorhydria that this ferment may be diminished in amount. Medicinal treatment seems incomplete without an intestinal disinfectant. Salol and dimol were used, the latter proving more effective. One tablet night and morning seems to be the required dose, as in one or two instances diarrhœa which had occurred ceased when the number taken was reduced to the two per day, and it was thought that the larger dose was proving too strong in its action.

(3) With regard to aperients, an intelligent patient will soon learn to appreciate a thorough bowel action, and will make known the presence of an insufficient though regular action. When the cæcum has become dilated and the colon "greedy" agar-agar, which appears to have a greater affinity for water than that developed by the colon, should be added to the aperient, the best of which is probably liquid paraffin. Aperients which have an irritant action should be avoided. The patient should be advised as to the desirability of regular defæcation, in the hope of regaining the action of the ileo-cæcal valve as the general tone of the tract improves, which it will do if the condition has not become chronic.

(4) No dyspeptic patient should be required to take an excessive diet. Although this might increase his weight, it would assuredly increase his dyspepsia. The individual taste should be considered, and the diet altered to suit it. An attempt should be made to present the food in such a way as to excite psychical secretion. Milk should be given in moderation, and the addition of citrate of soda will often prove effective in overcoming any difficulty experienced in the assimilation of moderate or reduced amounts. Any mixture of proteins with fats in a liquid form should be avoided. Meats are better cooked in their own juices; milk should not be given at meals at which meat is served; fish should not be fried in oils, and, if possible, the fat on protein should be crisp—as, for example, that of bacon. Carbohydrates, which are known to excite the secretion of acids, though they do not require or use it, should be served at meat meals.

If the above treatment is carried out an increase in the amount of food which a dyspeptic consumptive patient can digest without discomfort will often be noted, with an improved reaction to the specific pulmonary treatment which has been adopted in that particular instance.

I wish to record my sincere thanks to Dr. J. J. Perkins and Dr. L. S. T. Burrell for permission to investigate their cases at Brompton Hospital, for their kind advice, and for their interest and encouragement in this work.

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PUBLIC HEALTH WORK IN CZECHO-SLOVAKIA.—The Czecho-Slovak Ministry of Health, with a view to securing improved coöperation between voluntary and official health agencies, has lately issued a circular letter to district health officers, inviting them to coöperate in the programme of the Association for the Protection of Mothers and Children and the Masaryk League against Tuberculosis. It is proposed to establish a local branch of the League, with a dispensary, in every district which has approximately 60,000 inhabitants, on lines agreed upon by the organisations represented in the National Council of Social Hygiene, which held its summer session on July 4th. It was then decided that the Red Cross, tuberculosis, child welfare, temperance, and venereal diseases associations and the associations for the social welfare of the young and the education of cripples should also possess centres in each district of similar population. It is hoped that this coördination of effort will increase efficiency and prevent overlapping of work.

TRAUMATIC RUPTURE OF A HYDRONEPHROSIS.

BY H. W. L. MOLESWORTH, F.R.C.S. ENG.,
ASSISTANT SURGEON, ROYAL VICTORIA HOSPITAL, FOLKESTONE.

A CASE of this rare accident having recently come under my care, I feel that the clinical history may be of interest. A somewhat cursory search of the literature has enabled me to trace 11 previously reported cases, which, with two exceptions emanating from America, are all reported in continental journals; a list of these cases is therefore added, with a very brief review of the cases. I know of no English case or specimen which illustrates an accident whose rarity is its chief claim to notice.

Author's Case.

A female, unmarried, aged 50, whom I saw in consultation on June 9th, 1922, gave the following history. At 8 P.M. on the 8th she slipped from a chair on which she was standing; she then stumbled into the edge of a washstand, striking her left side a blow of moderate severity. Immediately she suffered violent left-sided abdominal pain, and shortly afterwards vomited. Pain continued, and next morning she was seen by her doctor, who advised her removal to a nursing home for observation.

Condition on Examination.—I saw her at 8 P.M. on the 9th. Pulse had risen from 80 to 108; temperature 99·4° F.; she had vomited once, and had passed urine naturally several times since the accident; the urine contained scanty red blood cells. A typical abdominal facies. Abdomen not distended; no evidence of free fluid; extreme tenderness and rigidity on the left side; rest of abdomen appeared normal. Catheter specimen contained scanty red cells.

At 9 P.M. a general anæsthetic was administered, and as the rigidity disappeared a tumour became apparent. This was a swelling about the size of a fœtal head. It was fixed, its upper limit below the costal margin, its lower in the left iliac fossa. Its contour was rounded, and it did not extend into the loin. Colon resonance could not be made out. At this stage the clinical diagnosis was "injured ureter" and it was decided to open the abdomen because: (1) the swelling had not the character of a renal tumour; (2) peritoneal injury could not be excluded; (3) it offered the chance of determining the presence of another kidney.

Operation.—The abdomen was opened at the inner border of the left rectus abdominis. No free fluid found. Swelling lay to inner side of descending colon. Puncture showed its contents to be blood and urine. Right kidney appeared normal in size and position. Abdomen was closed, a small tube being used because of leakage at the puncture. Patient in right lateral semi-prone position. A nephrectomy was done through the oblique incision. The only difficulty was in distinguishing the collapsed sac from the descending colon. Tubes were removed in 48 hours. Healing was uneventful. No evidence of renal insufficiency appeared, and the patient left the home after three and a half weeks.

Specimen.—The specimen, now in the hands of the curator, Royal College of Surgeons of England Museum, is a thin-walled left hydronephrosis of congenital type. Ureter is kinked and narrowed at its junction with the pelvis. At the lower pole are two irregular radial tears about three-quarters of an inch long. A third tear at the hilum was produced during delivery of the kidney.

Cases Previously Reported.

Oehme,[1] of the Surgical Clinic, Tübingen, reports a case in detail, which was operated on by Prof. Hofmeister, and quotes the following[2]:—

1. Schetelig.—Patient "born with a big belly." Three attacks of pain and hæmaturia. Operation: Median incision, transperitoneal nephrectomy. Patient died 36 hours later. Post mortem: A large burst hydronephrosis.

2. Cantu.—Man of 65 fell from a tree, and felt a tearing sensation in the left side of the belly. A large fluctuating tumour appeared; he had fainting attacks and vomited; three days later he died. Post mortem: A burst hydronephrosis due to calculus.

3. Schede.—Woman, aged 26. Five days after a fall across a basket a large abdominal swelling diagnosed as a twisted ovarian cyst. Transperitoneal nephrectomy. Patient died; necropsy showed a large burst hydronephrosis.

4. Lampe.—A sailor, aged 16. Fell a distance of 20 feet into a ship's hold. Continued to work for one and a half days; operation on the fifth day after his accident. Laparotomy and drainage. After operation he developed a large urinary fistula and wasted rapidly. Died 12 days after operation. Post mortem: A tear in the lower pole of a large hydronephrosis.

5. Dodge.—A man of 35 received a blow on the left side with a cudgel. Three days later he was admitted to hospital. There was a large fluctuating intra-abdominal tumour. Laparotomy, transperitoneal nephrectomy; patient recovered. Specimen was a large hydronephrosis, with two ruptures in the pelvic portion.

6. Suter.—An apprentice of 16 fell, striking his lumbar region against the rungs of a ladder. Violent pain, sickness, and hæmaturia followed. Bladder injury was suspected and a suprapubic incision was made. This was closed, and through a pararectus incision extending into the loin a large hydronephrosis which had ruptured into the peritoneum was removed. The patient recovered.

7. Gaudiani.—A young man, after lifting a heavy weight, appeared to suffer from perityphlitis. At operation an old-ruptured hydronephrosis was revealed, and was removed. Recovery. This case might appear to come under the heading of spontaneous rupture, together with Prof. Brentano's two cases. There was, however, the definite history of trauma, and it appears that very slight violence may suffice to rupture one of these thin-walled sacs.

8. Rehn.—A child, aged 8, had had a swelling in the left side since birth. A fall across the edge of a box resulted in severe pain, vomiting, and hæmaturia. Bladder injury was at first suspected. A suprapubic incision was made, which was then closed. An incision in the side led to the discovery of a hydronephrosis as large as a child's head. Nephrectomy was performed, and the peritoneum, which was torn in one place, was repaired. Death followed three days later. In this specimen there was a tear at the upper pole, and the ureter was partly torn away from its junction with the pelvis.

9. Hofmeister's case was as follows. A man of 26 had enjoyed good health until one year before his second accident, when he was kicked in the scrotum by a horse. This injury incapacitated him for 14 days; but he suffered no urinary symptoms. From this date he noticed increasing swelling of his abdomen. In November, 1900, he was again kicked by a horse. The blow struck the left side of his abdomen. For a brief time he was unconscious. He vomited. Pain was severe and situated in the left side of the abdomen. He walked home, but had to rest several times during a 15 minutes' walk. Pulse 116; no hæmaturia; abdomen distended and tender; percussion note dull on left side. Twelve hours after his injury he was operated on. The left kidney was exposed through a lumbar incision. A blue tense cyst presented and 4½ litres of frothy blood-stained fluid was removed by tapping. There was a rupture of the upper pole involving the peritoneum. Nephrectomy and repair of the torn peritoneum was followed by recovery.

10. E. W. Johannsen.—In this case the rupture appears to have occurred twice to the same kidney. A youth of 17 was dragged along the ground by the tethers of some sheep. Severe abdominal pain followed, and he was operated on at Hammel Hospital six hours later. At this operation the sigmoid and its mesentery were tightly stretched across a tense retroperitoneal cyst, which contained serous fluid and was then thought to be a lymphatic cyst. Three and a half years later he was crushed between a horse and its stable. He was admitted to Viborg Hospital. There was marked dullness on the left side. At operation there were dense peritoneal adhesions and a retroperitoneal collection of fluid. Nephrectomy was performed. The patient recovered. It was noted that he was a cryptorchid with ill-developed penis; cystoscopy was for this reason impossible.

11. Anthony H. Harrigan.—A girl of 10 fell on the edge of a soap-box. She was in a fainting condition for an hour. For two days she vomited repeatedly and was then brought to hospital. Abdomen slightly distended and rigid. Urine contained neither albumin, casts, nor cells. Leucocyte count 31,000, 77 per cent. polymorphs. Laparotomy; abdomen contained blood but no gross lesion; cystic mass in left renal region; wound closed. Nephrectomy was then performed in the usual way. Recovery was marked by a transient renal insufficiency. On discharge, renal function, estimated by the phenol-sulphone-phthalein method, showed 20 per cent. first, 25 per cent. second, and 7·5 per cent. third hour.

In addition to the case first reported, and to these 11 quoted above, Prof. Adolf Brentano reports

[1] Oehme, R.: Beitr. z. Klin. Chir., 1907, lii., 702.
[2] Schetelig: Archiv für Gyn., 1., iii. Cantu: Gaz. Med. Schede: Ehrfahrnungen über Nierenexstirpation, 1889, 17. Lampe: Inaug. Diss. Greifsw., 99. Dodge: Annals of Surgery, 1902, vi., 909. Suter: Beitr. z. Klin. Chir., xxvii., 354. Gaudiani: Riforma med. Palermo-Napoli, 1904, xx., 518; Deutsch. med. Wochenschr., 1904, No. 27. Rehn: In. Diss., Munchen, 1904. Johannsen, E. W.: Hospitalstidende, 1920, July 21st, 440. Harrigan, A. H.: Urologic and Cutaneous Review, May 5th, 1919.

two cases of rupture of infected hydronephrosis.[1] Of these he makes the interesting observations: (1) Tendency to spread upwards simulating subphrenic abscess; (2) rupture into the fatty capsule caused a tumour which was mistaken for the kidney itself; (3) predominance of peritoneal symptoms and signs. Of these the first two do not appear to result from the traumatic rupture, whilst the latter does to a marked extent.

The condition of traumatic rupture seems to be of such rarity that it is to be doubted whether conclusions drawn from a study of 12 cases can be of much practical value. It nevertheless presents points of interest from clinical, therapeutic, and pathological points of view.

Diagnosis.

Clinically, diagnosis appears to be essentially difficult. Should signs pointing to rupture of kidney (especially if there be reason to suppose that the ureter be injured) supervene after an injury which seems too slight to be the cause of rupture of a normal kidney, the condition may be suspected. Apart from this, correct diagnosis would seem to depend on evidence pointing to pre-existing hydronephrosis. Such evidence existed in Cases 1, 8, 9; in the case detailed at the beginning of this article the only history that could be obtained before operation was that of indefinite indigestion. After the diagnosis had been made close questioning elicited a typical history of intermittent hydronephrosis. Even should a definite diagnosis of ruptured hydronephrosis be made the case is not complete. We require evidence of the function of the opposite kidney; we also require evidence excluding coincident abdominal injury. Cystoscopy should give the first; but it would seem that where there is any doubt a small abdominal incision will give greater certainty and safety.

From a study of reported cases, no case appears to have been correctly diagnosed before operation. In Case 11 a diagnosis of ruptured kidney was made after laparotomy. In my own case the pre-operative diagnosis of injured ureter was shaken by the discovery that the tumour appeared to have no connexion with the usual site of a renal tumour; only after laparotomy was the seat of injury located with certainty, and only when the collapsed kidney was being delivered was complete diagnosis arrived at. Unfortunately, these cases are urgent. Since renal injuries are, and should be, treated expectantly, they reach the surgeon late; time and facilities do not allow of complete urological investigation. It therefore seems inevitable, in the present state of our knowledge, that a preliminary laparotomy should form the prelude to exact diagnosis. Difficulty has arisen because of the absence of any evidence pointing surely to renal injury. In Cases 9, 10, and 11, which are clearly reported, it is noted that there was no hæmaturia. In Cases 1, 2, 3, 4, 5, and 7 this was not recorded. Only in Cases 6 and 8 and in my own case was hæmaturia definitely noted as a symptom. The rapid development of a swelling is not confined to urinary extravasations. The site of the swelling should be a guide; but it seems that only in the cases where rupture is confined to the fatty capsule that a renal tumour is mimicked; where the fatty capsule is torn spread at a distance is common (Cases 3, 5, 7, and my own case). Percussion note was dull in two cases (9 and 10).

Ætiological Factors.

Though a thin-walled hydronephrosis may be ruptured by very slight violence it by no means follows that patients with hydronephrosis are less subject to the severer forms of violence. It seems best to classify three grades of violence: (1) Very slight—such as would be expected to produce no injury in a normal subject (Case 7, doubtful); (2) slight—such as might be expected to produce slight external bruising, but no incapacity, in a normal subject (Cases 3, 5, 6, 8, 10, 11, and my own case); (3) severe—second rupture (Cases 2, 4, 9, and 10). With regard to evidence pointing in the direction of congenital deformity, since the bulk of the cases of hydronephrosis seem to be due to imperfect development, in this series, Cases 1, 8, 10, 11, and my own case were certainly, and Cases 3, 4, 5, and 6 probably, of this nature. Such evidence may be classed as (*a*) general—club-foot, hare-lip, polydactylism, &c.; and (*b*) genito-urinary—herniæ, undescended testis, epi- and hypo-spadias.

Pathology.

Rupture in these cases lends support to Kuster's views on the mode of rupture of normal kidneys. The rupture is radial, and appears to indicate a burst rather than a break, or crush. Coincident tearing of the peritoneum is noted in Cases 6, 8, and 9. Such a high proportion—25 per cent.—is a strong argument in favour of a preliminary laparotomy for diagnosis; although in all three cases this appears to have been noted and repaired. There is, however, little doubt that an abdominal incision, in addition to its previously discussed advantages, gives a better chance of removing any soiling with urine or with blood-clot, as in Harrigan's case.

Therapeutics.

Nephrectomy is the operation of choice. No form of repair can be expected to hold under the pressure proximal to ureteric obstruction. Plastic operations on the renal pelvis call for careful planning and aseptic conditions. Should there be evidence of bilateral hydronephrosis and renal insufficiency a nephrostomy pending more complete investigation of the urinary functions would seem indicated. The condition has had a high mortality; of the 12 collected cases 5 died (41 per cent.), but the more recent cases of the series show a greatly improving record.

[1] Brentano, A.: Zeit. f. Urologie, 1912, vi., 713.

Medical Societies.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES.

THE second annual meeting of the Society was held on Friday, July 20th, under the new President, Colonel L. W. HARRISON, R.A.M.C. (retd.)

Mr. FRANK KIDD read a paper entitled "Vasostomy for Chronic Seminal Vesiculitis (a New Technique)." (The paper will be found in full on p. 213.)

The PRESIDENT expressed the thanks of the Society for this contribution, remarking that all who had to do with these difficult cases would agree that they were the bugbear of the worker in the field of venereal diseases.

Dr. DAVID WATSON said he had been discouraged from doing the operation described by reading an account of some experimental work which was done in America. The difficulty of that worker was to find an efficient gonococcocide which yet should not damage the tissues of the vas. After hearing this minute description of the operation and the results Mr. Kidd had secured, he intended to try it in future suitable cases. He would particularly like the same make of cannula as Mr. Kidd used. With regard to the use of colloidal silver, some doubt had been thrown on the use of colloids, and with those doubts he felt some sympathy. His use of colloidal silver in gonorrhœa had not been so happy as Mr. Kidd's. He could not agree that the behaviour of gonococcal retinitis or iritis after treatment placed it in a category different from that of arthritis; he had found the iritis clear up as readily as the joint trouble. He could only remember one case in which non-operative treatment failed to clear up the chronic vesiculitis; probably, however, the operation now described cleared up the condition in a much shorter time.

Mr. F. F. WARD said he believed his failures in this condition had been due to the fact that he had washed out once only. He described one or two cases in which trouble ensued. The cannula he had been using was a lacrymal duct cannula. If at the injection of colloidal silver the patient complained of pain, that was an indication that the substance was actually in the vas. He would like to know whether the operation could be done in a fairly recent and acute case. He thought the operation was applicable far more often to cases which suffered from gonorrhœal arthritis.

Dr. DENNIS VINRACE said it was inadvisable to tell a patient with gonorrhœa that he was cured; a safer plan was to tell him to come for a further inspection after an interval; and if at the further interview his prostate was found to be enlarged, or his vesicles inflamed, he should be advised to have an operation. He hoped this operation would become a popular one, and that after the detailed description had been published more workers in venereal diseases would carry it out.

Mr. KIDD, in reply, said his object in bringing the communication forward was to popularise the operation. He had now been working at the matter for ten years, arriving at the present position after experiencing many difficulties. It was easy to cause the vas to slough if it were hung up; it was a simple procedure to ligature it. When operating on the bladder he often ligatured the vas, and nothing happened to the testicle. He hoped that those who essayed the operation would perform it on chronic cases, and follow his description of the operation in every detail. The colloidal silver he was using was one made specially for him at the Crookes Laboratory, and it was the best material for the purpose. Sometimes he used it in a 10 per cent. strength, very rarely indeed 20 per cent. His cannulas were made by Mr. J. H. Montague; it was essential to keep the wire in, otherwise there would be leakage into the needle, blocking it. He still emphasised the fact that there was a liability for iritis to recur after an interval of even years, and this was not the case with joint trouble after it had once been disposed of.

Reviews and Notices of Books.

CEREBRO-SPINAL FLUID IN HEALTH AND DISEASE.

By ABRAHAM LEVINSON, B.S., M.D., Associate in Pediatrics, Northwestern Medical School. London: Henry Kimpton. 1923. Pp. 267. 25*s*.

Dr. Levinson's book is already known in this country. In this, the second edition, he has added a good deal of new matter and brought the whole up to date. The result is a useful and thoroughly practical manual. Indeed, the author has rather tended to omit theoretical considerations in places where they might with advantage have been included. This is particularly the case when he deals with the newer diagnostic procedures, such as the colloidal gold and mastic reactions, depending upon alterations in the physical properties of the proteins of the cerebro-spinal fluid. His descriptions of the uses and interpretations of these tests is excellent, and his account of the technique quite sufficient to enable an intelligent worker to carry them out; he barely touches, however, upon the much-discussed mechanism of these phenomena.

A description of the technique of cistern puncture is given, and here the author might have gone more into detail. His advice is that no one should practise it without frequent preliminary trials on the dead body, and to do this avails more than the reading of scores of pages of instructions. No mention is made of the washing out of the spinal theca through needles inserted in the cervical and lumbar regions. Certainly the value of this procedure is doubtful, and it may be questioned whether it is ever justifiable, but it is for advice and information on just such points as this that the reader goes to books like Dr. Levinson's.

Froin's syndrome comes in for rather casual mention. To imply that it consists only in xanthochromasia and increased protein and cell content of the cerebro-spinal fluid is hardly to do justice to its originator. It is the presence of these phenomena in the fluid from one portion of the theca in conjunction with normal or more or less normal fluid higher up that constitutes the full syndrome; in practice, we admit, the presence of the normal fluid higher up is frequently taken for granted. The section on the anatomy of the ventricular systems and of the meninges is lucid and the illustrations good. The historical summary is excellent and makes interesting reading. A good many of the illustrations are unnecessary. Microphotographs of tubercle and other bacilli are not of much use to the sort of readers who are likely to resort to Dr. Levinson's pages, nor in fact to any one. It may be taken as axiomatic that even as in the dusk all cats are grey so in microphotographs all bacilli are alike.

BACTERIOLOGICAL DIAGNOSIS.

Leitfaden für die klinisch-bakteriologischen Kulturmethoden. Von Dr. HUGO SCHOTTMÜLLER, Professor und Direktor der medizinischen Poliklinik der Universität Hamburg. Berlin und Wien: Urban und Schwarzenberg. 1923. Pp. 96.

THIS handbook is intended as a guide to bacteriological diagnosis in a well-appointed clinical laboratory. The subject-matter dealt with is therefore rather restricted, and the greater part of the information which it contains is also to be found in more complete works on bacteriology. The methods which are recommended are well described, and they derive interest from the fact that they have been selected by one who has had large practical experience in the subject and has himself devised some of the technique. Sixty-eight of the 91 pages are devoted to blood culture, and both in this section and elsewhere especial attention is given to the streptococci, as is natural considering the association of Schottmüller's name with work on this group of bacteria. Some of the statements are more suggestive of finality in streptococcal classification than will be accepted as they stand by most other bacteriologists. For the "typhoid-coli" group of organisms the methods of diagnosis are, in accordance with German custom, rather unnecessarily complicated, especially as regards the use of various whey and nutrose media, which in this country are usually regarded as quite superfluous for routine diagnostic work. The simple and entirely satisfactory MacConkey's lactose bile-salt agar, on the other hand, is not mentioned. The omission of dulcitol, which is so useful in culture-media for the identification of the salmonella group, seems strange in a book written by the original sponsor of the paratyphoid bacilli. The book is very well and clearly printed, and contains a good index but very few references.

Mikromethodik: Quantitative Bestimmung der Harn- und Blutbestandteile in kleinen Mengen. Zweite Auflage. Von Dr. med. et phil. Ludwig Pincussen, Direktor der Biochemischen Abteilung des Städt Krankenhaus am Urban zu Berlin. Leipzig: Georg Thieme. 1923. S. 125. M.18.

IN this book, in the compass of 125 pages, the author brings together many of the more recently described micro-methods for quantitative investigation of the blood and also micro-methods worked out by himself for the estimation of the constituents of the urine. Micro-methods involving for the patient only a prick with a needle are of obvious advantage in dealing with the blood; in the case of the urine, however, their advantages hardly appear to outweigh their disadvantages; the use of only 0·1 c.cm. of urine for estimation of the nitrogen by a micro-Kjeldahl method and of 1 c.cm. for estimation of the chlorides by a micro-Volhard method seem rather in the nature

of a tour de force, when dealing with such easily obtainable material. The disadvantages inherent in all quantitative micro-methods are by no means minimised by the author, and all who contemplate following his technique will do well to study carefully his "allgemeine Regeln" (p. 7). The methods of blood investigation are excellently chosen; they include procedures, mostly of proved value, for the estimation of practically all the constituents of the blood, including the gases, and also the method recently described by Michaelis for the estimation of the pH of serum and other fluids. The descriptions of technique throughout are models of clarity and conciseness.

THE ANATOMY OF THE FEMALE PELVIS.

By F. A. MAGUIRE, D.S.O., M.B., Ch.M. Syd., F.R.C.S. Eng., Hon. Assistant Gynæcological Surgeon, Royal Prince Alfred Hospital, Sydney. Sydney: Angus and Robertson, Ltd. 1922. Pp. 115. 6s.

THIS little book is written by a clinician for clinicians, though its author is also a teacher of anatomy in the University. It gives the main facts of female pelvic anatomy shortly and clearly, and goes on to the examination of the organs during life, from the anatomical point of view. Its small size and easy arrangement will render it a serviceable book of reference for those who may find their knowledge of the parts at fault when dealing with some condition of disease in these regions.

A MANUAL OF HUMAN ANATOMY FOR DENTAL STUDENTS.

By R. BRAMBLE GREEN, M.B., B.S. Lond., F.R.C.S. Eng. London: Benn Brothers, Ltd. 1923. Pp. 263. 18s.

THIS is a very good book on descriptive anatomy suitable for students of dentistry. It is divided into two parts, the first giving clear accounts of general anatomy, and of the skeleton and systems throughout the body in general. The second part is devoted to the regional anatomy of the head and neck. It is not a manual of dissection, but appears to sum up, in an intelligible and short way, all that it would seem necessary for the students to know. There is no attempt to deal with the teeth, on which there are special handbooks. The information contained in the book appears to be thoroughly reliable, except that in one place the author seems to suggest that the palatoglossus owes its innervation to the twelfth cranial nerve, on which point some might differ from him. The volume is well produced and printed in clear type, with useful illustrations.

BOOKS FOR NURSES.

Surgical Nursing and After-Treatment. Second edition. By H. C. RUTHERFORD DARLING, M.D., M.S. Lond., F.R.C.S. Eng., F.R.F.P.S. Glasg., Surgeon, Coast Hospital, Sydney, N.S.W.; Demonstrator of Anatomy, Sydney University. London: J. and A. Churchill. 1923. Pp. 566. 8s. 6d.

IN this portable volume Mr. Darling has condensed admirably all the knowledge that a nurse is expected to possess when called upon to undertake a surgical case. Given the practical experience that can only be obtained at the bedside, any nurse who knew all that this book contains would be able to undertake the nursing care of any surgical patient. Each chapter is preceded by a synopsis of its contents, which are then presented in a lucid and readable form. A number of illustrations add to the attractiveness of the book. It is divided into sections—namely, "General Surgical Nursing" and "Regional Surgical Nursing." In the first section short accounts are given of the pathology, symptoms, and treatment of the general surgical conditions commonly met with, including a glimpse into bacteriology and immunity. The general principles of asepsis, the arrangement of an operating theatre in hospital and in private practice, the treatment of hæmorrhage, infections, and fractures are dealt with adequately. It must be remembered that the book was written in Australia for Australian nurses, and that references to the South as an ideal aspect for an operating theatre must be translated into North for our latitude. The second section on regional surgery describes the preparation of the patient, the requirements of the surgeon, and the special after-treatment necessary for operations on the various organs of the body. A number of the modern improvements introduced during and since the war are included, and the book is thoroughly up to date. We hope that the book will meet with the success which is its due.

The Nursing of Infectious Diseases. Third edition. By F. J. WOOLLACOTT, M.A., M.D., B.Ch. Oxon., D.P.H. London: The Scientific Press, Limited. Pp. 180. 4s.

THIS book, based on a course of lectures to nurses given by Dr. F. J. Woollacott, has been revised and brought up to date by Dr. Dorothy C. Hare. The chief additions relate to methods of investigation of infectious diseases both for diagnosis and infectivity, chapters on cerebro-spinal fever, tuberculosis, and venereal diseases having also been included. The subject of infection and the prevention and general management of infectious diseases is briefly but adequately discussed in the first three chapters of the book, after which follows a description of the chief infectious diseases of this country. Excellent judgment has everywhere been shown in the selection of points for discussion, and although it is assumed throughout that the reader has some acquaintance with the general principles of nursing, nothing relating specifically to the nursing of infectious diseases has been taken for granted. Some of the teaching given would hardly be endorsed by leading authorities at the present day.

In discussing the various plans adopted for preventing cross-infection the principles of barrier-nursing and bed isolation are described, but enough emphasis is hardly laid upon the fact that with the slightest neglect or carelessness on the part of a single nurse the whole system breaks down in that particular institution. Indeed, the experience of most authorities goes to show that even with the utmost care in technique bed isolation is not safe for measles or chicken-pox, or even, in Dr. W. Goodall's view, for severe cases of scarlet fever, diphtheria, or whooping-cough during the acute stage of the disease. These are small points, however; the book as a whole is admirably adapted for its purpose, and the new edition will be welcomed by nurses.

Text-book of Anatomy and Physiology. For Training Schools and other Educational Institutions. By ELIZABETH R. BUNDY, M.D. Fifth edition, revised and enlarged by MARTHA TRACY, M.D., Dr.P.H., and GRACE WATSON, R.N. London: J. and A. Churchill. 1923. Pp. 442. 11s. 6d.

THIS little book was written as a text-book for those who were training for recognition as nurses, and includes an account of the human body from anatomical and physiological standpoints. The difficulty of producing enough and not too much, in writing for readers of this sort, is known to everyone who has attempted the task, and it is easy to be over-critical when dealing with the efforts of others. We can only claim, then, to express an individual opinion when we say that such things as the treatment of the palate bone as a separate entity, or the mention of nutrient foramina, however brief they may be, seem to be unnecessary; we rather think that, for nurses, certain parts and functions of the body might be treated with much more detail than is usually afforded, while of the rest some might be sketched in with broad outlines and others omitted altogether. The writers of this book do not see things in quite the same way, however, and the fact that the work has reached its fifth edition is perhaps sufficient justification for their faith.

To assist the authors in preparing the sixth edition we may note the following points. Fig. 79 has a mistaken label for the rectus; the nerve supplies of buccinator, diaphragm, and one or two others would bear a little revision; such things as the rotating action of the psoas and the origin of the small pectoral muscle might also be reconsidered; it might, moreover, be well to harmonise the conception of the meaning of eversion and inversion of the foot with that more usually accepted. The work is well and clearly printed and produced, and is copiously illustrated, with many coloured figures.

New Inventions.

NEW PATTERN OXYGEN SIGHT-FEED VALVE.

THE illustrations show how, by means of a single piece of apparatus, the supply of oxygen to patients can easily be regulated and waste obviated. The tube and funnel method is not only wasteful but often defeats the object of its use, as usually the blood becomes saturated with oxygen, the H-ion concentration is decreased, and consequently the respiratory centre receives less stimulation than before, and the patient breathes more shallowly than ever. Oxygen should be given in such a way that it enriches, but does not displace, the air the patient breathes. This can be achieved most economically by means of the apparatus described herewith, the oxygen passing

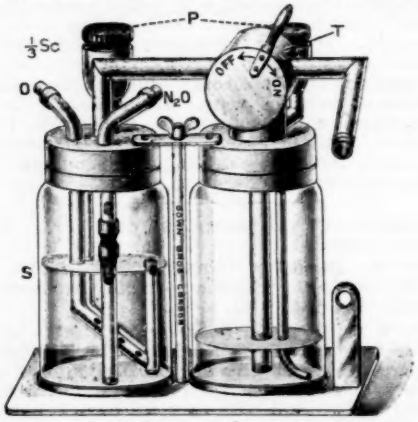
downwards into a vertical tube covered by a small quantity of water. The bottom of the tube is open, and at different distances above are drilled small holes. A small flow of oxygen will, by its pressure, only displace a small quantity of water from the tube, and will bubble out of the first hole. A greater flow will, of course, displace more water and bubble out of the second hole, and so on. In this way the physician can order the nurse to give the patient two, three, or four holes of oxygen as the case may be, instead of vaguely ordering the administration of oxygen. In order that the patient should get the full benefit of the small quantity of oxygen required, a nozzle is attached to the rubber tube, and by means of a spring clip in connexion with it, the nozzle can be fastened to the bedclothes in such a position that the flow of gas is directed towards the patient's nostrils or mouth, and as near as may be necessary, thus achieving the desired object of enriching the air the patient breathes.

The apparatus is supplied in two forms by Messrs. Coxeter and Son, 171, Pancras-road, London, N.W. 1, one for use with upright cylinders and another for use with horizontal ones. In one form the apparatus consists of a pressure gauge and sight feed in one, ready for screwing into the cylinders, the gauge enabling one to see at a glance how much oxygen is available and the control of the gas taking place at the cylinder valve. In the second form an automatic pressure-reducing valve is provided for screwing into the cylinder, to which is connected, by a rubber tube, the sight feed part which is hung at the head of the bed, and the flow of the gas is controlled by a fine adjustment valve attached thereto, instead of on the cylinder.

F. P. DE CAUX, L.R.C.P. Lond., M.R.C.S.

AN APPARATUS FOR THE ADMINISTRATION OF NITROUS OXIDE, OXYGEN, AND ETHER.

THE apparatus here illustrated consists of two 8 oz. bottles fitted with screw tops and mounted on a metal base. The N_2O inlet to the water sight feed bottle (S) is made partly of metal and partly of glass,



the metal part having a hole above the water-level equal to the calibre of the tube itself. When the N_2O is turned on the level of the water in the glass tube is depressed, such level indicating regularity of flow. A depression of ¼ in. represents approximately a flow of 120 gallons of N_2O per hour. The oblique construction of the oxygen tube (O) enables the bubbles to be plainly seen, and permits at the same time of a rapid and considerable increase in the volume of the oxygen without the risk of water being driven out of the bottle. Two "holes" of oxygen with a depression of ¼ in. in the N_2O tube represents 10 per cent. of oxygen. Both gases can be easily varied according to the requirements of the patient, and delivered under positive pressure if desired. The mixed gases can be diverted through ether, or C.E. mixture if preferred, by means of the two-way stop-cock (T). The bottles can be filled or emptied through the plugs (P) without unscrewing the tops. On the assumption that a table of some kind is usually available for the anæsthetist, an elaborate stand or carrying case has been omitted from the design. The cylinders are mounted with fly nuts on a horizontal metal bar which is provided with two detachable legs. Long lever keys are used and the gas valves heated with a spirit lamp. Used in conjunction with a portable tracheal insufflation apparatus already described by me in THE LANCET,[1] and to which this unit can be easily attached, N_2O, oxygen, chloroform, and ether can be given by inhalation or insufflation as desired.

The original model of this apparatus was made for me by Messrs. Coxeter and Co., and the improved pattern by Messrs. Down Bros., St. Thomas's-street, S.E. 1.

I. W. MAGILL, M.B., B.Ch., B.A.O. Belf.,
Senior Anæsthetist, Queen's Hospital, Sidcup.

[1] THE LANCET, 1921, i., 918.

BRITISH MEDICAL ASSOCIATION.

ANNUAL MEETING AT PORTSMOUTH.

(*Continued from p. 190.*)

REPRESENTATIVE MEETING.

MONDAY, JULY 23RD.

Financial Statement.

THE session opened with a financial statement by the Treasurer, Dr. G. E. HASLIP, for the year ending Dec. 31st, 1922. The income for this year amounted to £112,141, the expenditure to £102,337, with a surplus of £9804. The revenue from subscriptions amounted to £2 11*s.* 9*d.* per head of membership, which had been allotted as follows :—

	£	*s.*	*d.*
Central Association expenses	0	2	10
Central meeting expenses	0	8	4
Central premises expenses	0	3	8
Central printing, stationery and postage account	0	2	2
Central staff expenses	0	11	3
Library account	0	0	8
Journal account	0	7	3
Grant to Irish Committee	0	0	10
Grant to Scottish Committee	0	1	7
Capitation grants to branches	0	4	5
Subscriptions written off for deaths and in arrears	0	2	3
Depreciation, &c.	0	1	8
Surplus (part)	0	4	10
	£2	11	9

In pursuance of a decision of the Glasgow meeting, a separate reserve fund had been created, which now stood at £27,247, being entirely represented by first-class securities readily realisable. The combined reserve fund and surplus account amounted to £152,142. Expenditure, Dr. Haslip said, continued to increase year by year, and although a motion by Hastings invited the meeting to "view with alarm and regret" the continuous increase of central staff expenses, the meeting emphatically signified its approval. Dr. J. D'EWART made good the point that an Association which did not pay its own office staff properly could not go to the Government with a valid plea for an adequate capitation fee. A motion to reduce the annual subscription was withdrawn and a motion to reconsider it was lost.

Insurance of Editorial Staff against Libel.

A motion by Wandsworth and Blyth proposed that the Association would feel safer if it were protected by insurance against process for libel or slander against any of the editorial staff. Dr. HASLIP preferred to leave the responsibility on those who acted for the Association, asking what the effect on a jury would be of a question from counsel: "Is it a fact that your Association is insured against libel actions?" Dr. BOLAM thought that the proposal would involve insurance of every activity of the Association; the right remedy lay, he said, in "the care with which we order our actions." The motion was lost by a large majority.

Medical Benevolence.

The Treasurer alluded in his financial statement to the meagre contribution of members of the Association to medical benevolence; the Royal Medical Benevolent Fund had only benefited during the year to the extent of £837 (out of a subscription total of some £60,000). It was a lamentable fact that a mere 10 per cent. of the medical profession in the country and only 7 per cent. in London subscribed to the Fund. There was, however, this to be said: the medical charities offered no encouragement to the Association to assist them—and he gave specific examples of lost opportunities. The B.M.A., if asked for their help, could, said Dr. Haslip, easily double or treble the subscription list to the R.M.B.F. The meeting acquiesced in the statement that "the charitable funds are a disgrace to our profession," and left it at that.

The Association's New Home.

The Chairman of the B.M.A. Council and the Treasurer then reported briefly on the arrangements made to acquire new premises in Tavistock-square for the headquarters of the Association, figures being given of the accommodation in the new building and of the financial transactions in connexion with the purchase. Dr. BOLAM said that the building, designed by Sir Edwin Lutyens, and originally intended for a theosophical college, was during the war taken over for Government purposes, and came into the hands of the Disposals Board. The building as it existed would provide scope for all present activities; it contained a really noble hall which would hold the largest meeting the Association was ever likely to require, and more space for social purposes could be obtained by the acquirement of certain houses fronting on Tavistock-place. Dr. HASLIP, who described the new house as a "gift from the gods," showed in detail how the cost of acquiring the premises on a 200 years' lease could be met. Much enthusiasm prevailed in the meeting for the new venture. The CHAIRMAN broke his self-imposed silence to speak feelingly on the great opportunity afforded for the social work of the Association. Dr. J. A. MACDONALD congratulated the Council on their prescience and good skill in negotiation. Mr. BISHOP HARMAN suggested a Gate of Honour in memory of members who fell in the war. The suggestion was made, situated as it was in the neighbourhood of the new University of London, the house might become a centre of intellectual life and of organised post-graduate medical work in London.

Organisation of Colliery Surgeons.

As Chairman of the Medico-Political and Parliamentary Committee, Mr. E. B. TURNER proposed the adoption of a scheme for the organisation of colliery surgeons in England, suggesting the formation of special colliery and works surgeons' committees to deal with the domiciliary attendance upon persons on a contract basis, the Council of the B.M.A. to be the executive committee, and every surgeon in the area paying a special subscription of 5*s.* per annum towards expenses. The scheme upholds the principle of free choice of doctor and freedom from lay control, the method of payment to be left to local arrangement, contributions, where possible, being deducted at the colliery or works' office. This scheme was accepted after a brief discussion.

Medical Examination of Emigrants.

A recommendation by the Council that the fees chargeable by the medical referees appointed by the Dominions of the Empire to examine proposed emigrants should be 10*s.* 6*d.* per adult of the age of 16 years and over, and 2*s.* 6*d.* for each child, but that in no case should more than two children in each family be charged for, was accepted by the meeting.

State Recognition of Opticians.

A further recommendation by the Council in regard to opticians was accepted in the form:

That any State recognition of sight testing by persons not possessed of a medical qualification would not be in the interest of the community, and ought to be opposed in the strongest possible manner, and that the Council be instructed to take action in accordance with this decision.

Fees at School and Child Welfare Clinics.

It was proposed by the Chairman of the Medico-Political and Parliamentary Committee that the following minimum fees for the treatment of school children and for treatment at maternity and child welfare clinics or centres by private practitioners be approved :—

1. For the treatment of minor ailments, £1 11*s.* 6*d.* per session of not more than two hours, provided there is a limitation, to be agreed locally, of the average number of new cases to be seen in each session.

2. For ophthalmic work involving refractions, 10*s.* 6*d.* per case, or £2 12*s.* 6*d.* per session of not more than two hours, provided there is a limitation, to be agreed locally, of the average number of new cases to be seen in each session.

3. For adenoid and tonsil operations involving a general anæsthetic, a total fee for the two practitioners concerned of £1 11*s.* 6*d.* per case for less than four cases; or £5 5*s.* per session at which the average number of cases per session to be dealt with is agreed locally, such agreed number to be not more than eight.

4. For other operations on eye, nose, ear and throat cases a fee specially arranged in each case.

5. For the administration of anæsthetics, £2 12*s.* 6*d.* per session of not more than two hours, provided there is a limitation, to be agreed locally, of the average number of cases to be dealt with in each session.

6. For X ray treatment of ringworm, £3 3*s.* per completed case where the practitioner provides his own apparatus, or £2 2*s.* where the apparatus is provided by the local authority.

7. All the foregoing fees to be exclusive of any fee paid to institutions for maintenance or other attendance on patients.

8. Any local arrangement in terms varying from the above to be submitted to the Council for approval before being adopted.

After some discussion on the combined fee for tonsil operations the motion was carried.

Salaries of Part-time V.D. Appointments.

The scale of remuneration for part-time senior medical officers of clinics set up by the Representative Meeting of 1917, under schemes for the diagnosis and treatment of venereal diseases, was rescinded in favour of the following policy :—

That the minimum remuneration for part-time senior medical officers of clinics set up for the diagnosis and treatment of venereal diseases be £1 1*s.* for the first hour or part of an hour and 10*s.* 6*d.* for every additional half-hour or part thereof.

Municipal Clinics and Hospitals.

Endorsement was given by the meeting to the recommendations of a committee appointed to consider the general question of the relation of private practitioners to municipal clinics and hospitals, the following principles being laid down :—

The object of maternity and child welfare centres should be educational and advisory, and therefore preventive. No medical treatment should be given at the centre as it is against the best interests of the centres to encourage women to go there for what they can *get* rather than for what they can *learn*.

When the expectant or nursing mother or the child requires any medical treatment, the procedure outlined under medical treatment of school children should be followed. This would limit the patients to those who are unable to provide a family doctor for themselves or for their infants. Where treatment has to be provided by the local authority at a clinic, it should preferably be undertaken at the common clinic for all statutory purposes.

There may be advantages to the work in associating with the centres a body of voluntary workers, but the whole of the work should be under the control of the medical officer of health in order that all the preventive agencies may be coördinated.

The support of the local doctors, nurses and midwives ought to be secured. To effect this it is important (*a*) that it be made quite clear that the sphere of the centres is restricted as recommended above, and (*b*) that members of these professions be represented on the statutory committee and the committees controlling the centres, these representatives being nominated by the local organisations of these professions wherever such exist.

Medical Treatment of School Children.

The procedure mentioned above was laid down by the Association in 1916 as follows :—

(*a*) The medical treatment of school children is a great national undertaking, the ultimate success of which largely depends upon the number of persons who are interested. From this point of view it is better that as many as possible of the medical profession should have personal contact with the work, rather than that familiarity with it should be confined to a small class of public officials.

(*b*) Medical practitioners who are engaged in private practice enjoy the benefit of a wider experience of the treatment of disease in general than those whose work is confined to the treatment (or the treatment and inspection) of school children.

(*c*) Treatment and recurrent supervision of the school children by such practitioners, supplemented by the "following up" work of the school medical officer, in the opinion of the Association alone give security that the medical needs of the children will be adequately met.

(*d*) The treatment of diseases of children gives those who carry it out opportunities of obtaining valuable experience. If the work is done by private practitioners who are engaged, apart from their school work, in treating members of the general public, the general public derives great benefit from the greater efficiency of private practitioners generally.

(*e*) The employment of private practitioners gives the education authority a much wider field of choice than if the work is carried out by whole-time officers, and by the employment of part-time officers the authority would be able to adjust the appointment of persons of special skill to its requirements.

Midwives and Use of Opium and Pituitrin.

The meeting renewed the protest contained in the following resolution passed in 1922 :—

That this meeting is of opinion that the practice of the use by midwives of opium (as well as of pituitary extract) is fraught with considerable danger, and considers that a continued protest should be made against such use.

Representations made to the Central Midwives Board and the Ministry of Health had evoked a statement from both bodies that there was no evidence that any harm had resulted from the use of opium by midwives. With regard to the use of pituitary extract by midwives, the Minister of Health recognised that this was a drug which should only be used by a midwife under the direction of a doctor.

Notification of Convictions to the G.M.C.

As the result of an emphatic letter to *The Lancet* and *British Medical Journal* of July 1st, 1922, in which Dr. J. M. Brennan, J.P., stated that he was not satisfied that trivial offences rightly came under the jurisdiction of the General Medical Council, the B.M.A. Council went into the matter and ascertained :

(*a*) That no similar system of notification of convictions of solicitors or barristers exists, although in a serious case coming before the courts affecting a barrister, the matter may be dealt with by the Benchers of his Inn of Court, and (*b*) that the procedure in the case of medical practitioners arose in the following manner : (i.) that in 1892 the Home Office was asked to report to the G.M.C. all convictions for felony ; (ii.) that in 1906 the Home Office was asked to notify all cases in which fines were inflicted, as well as those in which registered practitioners were ordered to be imprisoned ; (iii.) that in 1912, in consequence of certain matters which came under its notice, the G.M.C. requested that all convictions of practitioners might be reported to it, in order that it might be in a position to fulfil the duty laid upon it by Section 29 of the Medical Act, 1858 ; and (iv.) that the jurisdiction of the G.M.C. which empowers them "if they see fit" to erase, follows upon the fact of conviction ; it is not conditioned by the receipt of an official or other report.

These being the facts, the B.M.A. Council nevertheless satisfied itself that although the system was not free from theoretical objection, there was no evidence of hardship having arisen from the procedure.

Two amendments were offered to the meeting asking that the procedure should be further scrutinised. A representative of Marylebone complained that it was a hardship for medical men to be reported for trivial offences. Dr. F. G. RALPHS, J.P., thought it unnecessary to notify to the G.M.C. convictions such as for driving inadvertently without lights, and suggested making a distinction between summary (e.g., drunkenness) and indictable offences. Dr. D. A. SHEAHAN desired that doctors should be treated like barristers and solicitors, and not like children.

Sir JENNER VERRALL saw the difficulty of drawing the line anywhere. A medical man convicted of drunkenness in the course of his work should be reported ; the case of barrister or solicitor was not parallel. Mr. TURNER stated that no proceedings would be taken on the information in any one of the small cases ; for drunkenness it was only on a third notice that a warning was issued, and on a further repetition the offender was placed on probation for a year. But he felt strongly that it should not be left to the discretion of magistrates' clerks and chief constables which cases should be notified to the G.M.C.

The amendments were lost and the report of the B.M.A. Council accepted.

Medico-Legal Matters.

A resolution by Dr. CHRISTINE MURRELL instructing the B.M.A. Council to consider the desirability of publishing a Legal Handbook for Medical Practitioners was rejected, the feeling being general that the proposal would be difficult and costly to carry out ; while the advice needed by the practitioner could be obtained when the need arose. The Asso-

ciation had no desire to enter into competition with any of the existing text-books of legal medicine.

A motion proposed by Dr. S. NOY SCOTT (Plymouth) seconded by Dr. A. TENNYSON SMITH (Bromley), and carried, emphasised the desirability that medical men called as witnesses in legal cases (especially under the Workmen's Compensation Act) should consult with each other before the case is heard so that they may, if possible, agree upon facts.

Election of Eight Members of Council.

The deputy medical secretary announced that the voting for the eight members of Council for the session 1923–24 had resulted in the election of the following: Dr. H. G. Dain, Dr. E. R. Fothergill, Dr. R. L. Langdon-Down, Dr. J. A. Macdonald, Dr. G. W. Miller, Dr. C. Sanders, Mr. H. S. Souttar, and Mr. E. B. Turner. The election was conducted on the single transferable vote principle, and a woman member was nominated but not elected.

Nursing at Cottage Hospitals.

Dr. J. MCGREGOR-ROBERTSON raised the question of the position of nurses in cottage hospitals not recognised as training centres by the General Nursing Council. The B.M.A. Council felt that it would be in the interests of the public and of the nurses themselves if the training in such hospitals were allowed to count in some proportion at least towards the statutory three years' training. Dr. E. J. TOYE said it was a matter of life and death for cottage hospitals, for directly the nurses found out that such training and experience did not count towards obtaining the diploma they resigned.

Naval and Military.

The report of the B.M.A. Council under this heading was accepted and Colonel C. B. Heald, Major-General Sir William Macpherson, and Colonel Sir Walter J. Buchanan were appointed to the Council to represent the medical services of the R.A.F., A.M.S., and I.M.S. respectively. Sir Percy Bassett-Smith continues to represent the R.N.M.S. The B.M.A. Council had endeavoured unavailingly to reopen the question of the position of senior surgeon commanders, adversely affected by the 1919 regulations, and the meeting agreed that recently qualified medical practitioners should still be advised seriously to consider the disadvantages to which they are liable if they place their careers in the hands of the Admiralty.

Scotland and Ireland.

Reports were presented by Dr. JOHN STEVENS, chairman of the Scottish Committee, and by the chairman of the Irish Committee, and were approved. Dr. Stevens reported progress regarding the inquiries (1) into the results of gastro-enterostomy and gastrectomy, and (2) into puerperal sepsis.

TUESDAY, JULY 24TH.

Overseas Branches.

Sir JENNER VERRALL, in the absence of Mr. T. P. Dunhill, moved the approval of this section of the annual report. The position of salaried officers in the Windward Isles remained most unsatisfactory, the medical services of the West Indies being the worst-paid of all the Colonial services, or, indeed, of any services over which the Crown had any control. The Colonial Office took the view that the financial difficulties of the West Indian Governments rendered the prospect of increased salaries unlikely in the extreme. Dr. JOHN HUTSON (Barbados), in thanking the Association for their work on behalf of the West Indian branch, pointed out that this reply of the Colonial Office was, unfortunately, perfectly true. Dr. G. B. MASON (Grenada) also agreed that the Government could not at present help the doctors. In regard to drastic action, he reminded the meeting that refusal of British doctors to go out to the islands would open the door to the employment of American doctors. Dr. E. P. BAUMANN (Witwatersrand) brought an assurance of goodwill from the South African members at a critical stage in the negotiations regarding a separate medical association.

Non-Panel Practitioners.

Dr. C. BUTTAR, chairman of the Non-Panel Committee, moved the approval of a brief section of the report dealing with non-panel work. The B.M.A. Council in April last appointed a Committee of members not engaged in National Health Insurance work—viz.: Dr. A. Blackhall-Morison (London), Dr. C. Buttar (London), Dr. H. Cook (Cardiff), Dr. J. Don (Newcastle-on-Tyne), Dr. J. Stevens (Edinburgh), Mr. E. B. Turner (London), and Mr. W. Webster (Newcastle-under-Lyme)—to consider in what manner the Association could best promote the interests of members who had not entered into agreements with insurance committees. The Council was not yet in a position to make any recommendations. Dr. Buttar said that the Committee had not found much work to do, for the panel man was fairly well satisfied, while the non-panel man still made a living. He desired to get rid of the idea that the interests of the Association were becoming wholly bound up with those of practitioners under the Insurance Acts, and he foresaw important questions arising for consideration in view of the possible extension of insurance practice to the families of insured persons and the re-definition of the scope of general practitioner service. He wished to make five points: 1. How was the future of non-panel men affected by the Insurance Acts? 2. The provisions of these Acts, while irksome to the panel man, were insupportable to the non-panel man, and prevented him from working under them. 3. The situation could only be met by a return to the conditions of private practice. 4. Proper application should be made of Section 15 (3) of the original Act. 5. Inquiry should be pressed into the working of the Insurance Acts, where working well, where badly, and what alternative system could be devised more generally acceptable to the profession and of equal value to the community. The report was accepted without comment.

Highlands and Islands.

It was pointed out by a representative of the Highlands and Islands of Scotland that the mileage subsidy from the Treasury had proved of enormous benefit during the past nine years in providing more efficient service for poor persons. The grant had been raised from 6*d.* to 9*d.* and then in 1920 to 1*s.* per mile run, but was still inadequate. Practitioners who derived four-fifths of their income from the Board of Health subsidy could hardly refuse service on instruction from the Insurance Acts Committee, and therefore asked leave to approach the Scottish Board of Health on their own account.

Notification of Venereal Disease.

A motion by Sir JENNER VERRALL, chairman of the Special Committee *re* Notification of Venereal Diseases, for approval of the relevant section of the report, produced a counter-proposition by the Chichester and Worthing branch, "That this meeting objects to any system of compulsory notification of venereal diseases at present." Mr. E. B. TURNER recited the results obtained in various parts of Canada from a graduated system of notification of those who prematurely discontinued treatment. Of 1762 patients warned in Toronto, it had only been necessary legally to proceed against 33. Any proposal for conditional modified notification should be preceded by education of the public by efficient treatment, especially at the hands of the general practitioner in rural areas, and by enforcement of legal action against quacks. Dr. MCGREGOR-ROBERTSON said that 40 to 60 per cent. of Scottish expenditure on venereal disease was wasted because treatment was not completed; they were not asking for notification but for some means of making effective the treatment of uncontrolled persons. It was resolved to leave the subject in the hands of the Council for further consideration.

Votes of Thanks.

On the proposal of the Chairman, the hearty thanks of the Representative Body were given to the following who contributed to the comfort, convenience, and

pleasure of the members of the Representative Body and their ladies: The Mayor and Corporation of Portsmouth; Mr. Douglas Handley; the concert party at the ladies' dinner and the smoking concert, and especially Mr. L. Glanville; Mr. Taylor, manager of the Municipal College; Mr. A. W. Ward, borough surveyor; the Southampton Division of the British Medical Association; the Ladies' Committee; Mr. T. A. Munro Forde, chairman of the Dinner Committee; Dr. C. F. Routh, chairman of the Reception Committee; Mr. Bosworth Wright, chairman of the Entertainments Committee; Mr. C. A. S. Ridout, the local general secretary.

On the proposal of Dr. T. W. H. GARSTANG, a previous chairman of the Representative Meeting, a hearty and grateful vote of thanks was tendered to Dr. WALLACE HENRY for his conduct of the meeting.

ANNUAL GENERAL MEETING, TUESDAY, JULY 24TH.

The formal meeting was held at 2 P.M. in the Municipal College, when Mr. C. P. Childe, F.R.C.S., was inducted as President by Sir William Macewen, retiring President. After transacting the statutory business, the meeting adjourned until 8 P.M. in the Town Hall, when Mr. Childe delivered the Presidential address entitled "Environment and Health," which appeared in substantial abstract in our last issue. The President was supported by the Mayor, Alderman F. G. Foster, J.P., Admiral Sir Sidney Fremantle, the Bishop of Winchester, and the executive officers of the Association. In proposing a vote of thanks, Dr. R. Wallace Henry spoke of the address as one in which research and philosophy had been duly blended. There were, he was glad to note, five medical men showing a keen interest in civic affairs by their work on the Portsmouth Town Council. The Bishop of Winchester, who seconded, said that nothing was more important to the welfare of the community than the right mutual relations of the members of the different professions to the places in which they lived. The Mayor, in supporting the vote of thanks, observed that as an ancient borough they had received a legacy of slums which Mr. Childe, as chairman of the Health and Housing Committee, was doing his best to ameliorate.

FUNCTIONS AND FESTIVITIES.

The Annual Dinner.

The annual dinner of the Association took place in the Town Hall on Thursday evening, July 26th. Mr. C. P. Childe, President of the Association, presided, and was supported by the Mayor (Alderman F. G. Foster, J.P.), the Admiral-Superintendent (Rear-Admiral Sir Percy Grant), Colonel Sir Arthur Holbrook, M.P., Captain Walter Elliott, M.P., Sir William Dupree, Sir Harold Pink, J.P., Captain Colin Maclean, and the Rev. W. H. David, vicar of Portsmouth. The toast of "The Imperial Forces" was given by Sir William Macewen, the retiring President of the Association, who expressed his belief that universal manhood training for a year or more during a suitable age would be a good thing for the physique of the nation, while all women should be trained to suitable avocations for the purpose of understanding what war might mean if it came. Sir Percy Grant, Lieut.-Colonel C. W. Mainprise, Wing-Commander R. J. Bone, and Sir William Dupree responded. The toast of "The Mayor and Corporation of Portsmouth" was given by Captain Walter Elliott in a brilliant and amusing speech. There was, he said, no such tyranny in the world as that practised in the sick room by the medical man; and when he was confronted with the spectacle of modern legislature he was apt to treat it with impatience if not contempt. One of the most urgent tasks before the country was the restoration of the local administration which had once been its great pride. The qualities of hospitality, initiative, and self-government in the best sense of the word had, he said, always characterised the town of Portsmouth. Alderman Foster, in replying, expressed his pleasure at having had the opportunity of welcoming the Association on behalf of the corporation. At this point trophies played for on the golf course at Hayling Island earlier in the day were presented—namely, the Ulster Cup to Dr. T. B. Jobson (handicap 9, 4 up on bogey) and the Childe Cup to Dr. J. Kyffin (handicap 18, 3 up on bogey). The toast of "The British Medical Association" was given by Sir Arthur Holbrook, who said the country was appreciating the efforts made by the medical profession to eradicate disease and promote new methods of treatment. Dr. R. A. Bolam, chairman of the B.M.A. Council, and Sir Joseph Verco (Adelaide) responded, the latter voicing the loyalty of the Australian branches. Dr. T. A. Munro Forde proposed "Our Guests," Sir Harold Pink and Prof. A. D. Blackader (Montreal) responding. On the invitation of Sir Jenner Verrall, "The Health of the President" was then drunk with musical honours. During dinner an admirable programme of music was rendered by the band of the Royal Marine Artillery.

Visits to Hospitals.

The chairman of the Royal Portsmouth Hospital Alderman Charles Dye, gave a reception at the hospital on Thursday, July 26th, when he briefly recited the history of the institution on which £34,000 had recently been expended. In 1902 the operations performed on in-patients numbered 531, in 1922 they had increased to 1872; while the population of the town had increased only 25 per cent., the hospital work was more than doubled and the number of operations had trebled. He was a firm adherent of the voluntary principle, free from State or municipal interference.

About 50 members of the Association attended at the Portsmouth and Southern Counties Eye and Ear Hospital on the same afternoon, when cases were shown by Dr. W. S. Inman and Mr. C. A. Scott Ridout, visitors being entertained to tea by the chairman of the hospital, Mr. Henry Dummer.

A party of 200 doctors and friends paid a visit to the Royal Naval Hospital, Haslar, on Friday afternoon, July 27th, when Major Meurice Sinclair, R.A.M.C., gave a demonstration on the treatment of fractures and on a mobile X ray plant. Most of the apparatus in the up-to-date massage department had been presented by the children of the Johannesburg and Rand schools as a war-time gift to the Navy in 1916. Music was supplied by the Commander-in-Chief's band.

Popular Lecture.

A popular address was given on Friday evening, July 27th, by Captain Walter Elliott, Parliamentary Under Secretary of Health for Scotland, on "Assimilation, or Food and Health," Dr. C. F. Routh presiding. Dr. Elliott's main thesis was that tissue-builders must not be neglected by reason of the belief that energy-yielders are the more essential, and he called attention to the liability of manufactured foods brought from long distances to be deficient in some of the elements vital to the body.

Breakfasts.

About 100 guests were present at a Medical Missionary breakfast, the first of its kind, held in the Queen's Hotel, Southsea, on Wednesday, July 25th. Dr. Mary Scharlieb was in the chair, supported by the Bishop of Winchester, Bishop Ingham, and Mr. C. P. Childe. Dr. Duncan Whyte, of Swatow, China, conveyed the greetings of the China Medical Missionary Association and explained its work. Dr. Scharlieb gave a brief address of welcome; she found it hard to understand why Christian members of the medical profession did not take a deeper interest in missionary work. Dr. G. E. Dodson, of the C.M.S., Persia, gave a description of missionary work in Central Persia, where he had been stationed since 1903. Prejudice and intolerance were giving way to a sincere appreciation of the work of the mission. He referred

in particular to the unhygienic conditions under which children of from 5–6 years of age used to work in the weaving of Persian rugs, and the late form of rickets which this induced, leading to knock-knee and a high degree of pelvic contraction in girls, necessitating Cæsarean section when they become mothers. Dr. Clement C. Chesterman, of the Baptist Missionary Society, Congo, spoke of the long-continued fight against parasitic diseases which menaced the existence of the population of tropical Africa.

Mr. C. P. Childe presided at a temperance breakfast given by Dame Sophia Wintz, as Vice-President of the National Temperance League in the Grand Jury Room at the Town Hall, on Thursday, July 26th. Colonel C. J. Bond, F.R.C.S., who gave an address, deprecated the tendency shown by the medical profession to be led by rather than to lead public opinion and national habit in the use of alcohol at any given period. Dame Wintz referred to the great work done in the Navy as the result of the efforts of the late Dame Agnes Weston with whom she had been associated for over 40 years.

Social Functions.

Over 1500 guests attended the President's reception at the Queen's Hotel, Southsea, on Tuesday evening, July 24th, which was a very brilliant affair. On the previous afternoon members of the Association attended in academic dress a special service at the old Parish Church of St. Thomas. The Portsmouth division of the Association gave an "At Home" on the Clarence Pier, Southsea, on Thursday evening, July 26th, when more than 1000 guests were received by Dr. and Mrs. Lockhart Stephens, and the Portsmouth Film Service depicted many phases of the Association meetings which had just taken place. The Mayor's Ball at the Portsmouth Town Hall, on Friday evening, July 27th, concluded the series of social functions. About 700 guests were invited and music was provided by Miss Sawyer's band, while Sir John Corke assisted the Mayor in the general direction. The Commander-in-Chief and a large number of civic dignitaries were present. The same evening there were a wind-up Carnival and Dance at the Esplanade Assembly Rooms, and during the afternoon Sir William and Lady Dupree gave a garden party at Craneswater, Southsea.

Excursions and Pleasure Trips.

At the invitation of the Winchester Division a large party motored to Winchester on Saturday, July 28th, and visited the Guildhall, Cathedral, and Winchester College. The Isle of Wight Division arranged an attractive excursion to the island, luncheon being served at Totland Bay and tea at the Royal Naval College, Osborne. Several afternoon parties were shown over the dockyard, visiting H.M.S. *Victory* and H.M.S. *Renown*. Visits were also arranged to Midhurst Sanatorium and to the Hayling Island Branch of the Treloar Cripples' Hospital.

Over 100 members of the Association visited the laboratory of Mr. J. F. Marshall, director of the Hayling Mosquito Control on Hayling Island. The visitors, who included many medical officers of health, were shown maps setting forth the work undertaken in the island and photographs of infected areas before and after draining, as well as tanks containing larvæ of various mosquito species, the life-history of which was demonstrated by Mr. Shute of the Ministry of Health. The salt-water mosquito, *Ochlerotatus detritus*, had been shown to be almost the sole cause of the local trouble, and by draining off stagnant pools of water left inside the sea walls in various parts of the island, the number of these pests was being steadily reduced.

EXHIBITION OF INSTRUMENTS AND DRUGS.

The exhibition of medical and surgical appliances, foods, drugs, and medical literature, was opened in the gymnasium of the Royal Naval Barracks, on Tuesday, July 24th, by Mr. C. P. Childe, as President-elect. Before declaring the exhibition open, the President-elect made a presentation to Commodore C. S. Townsend, R.N., in recognition of the valiant assistance rendered by officers and men of the Royal Naval Barracks in setting out the exhibition. This hall had never been lent before except for Service purposes. The presentation consisted of a fine silver ewer, one of a pair designed by Mr. John Flaxman, R.A., and produced by Mr. Josiah Wedgwood. Commodore Townsend, in reply, reproached the Association for its failing to find a cure for mal-de-mer, that most distressing malady of a sea-faring country. The exhibition was highly representative and well-arranged, part of the large room being set apart for luncheons and teas, a wireless programme being given at intervals. The exhibition remained open until Friday, July 27th, and was well attended throughout. An account of the exhibits will appear in a later issue.

The exhibitors held a Bohemian Concert at the Albert Hall on Friday evening, July 27th, when a number of the Hippodrome artistes took part. The exhibitors expressed their appreciation at the hospitality shown to them by the naval authorities and local medical profession, and a hearty welcome was extended to Mr. C. P. Childe, who was present at the concert.

ASSOCIATED CARDIAC CLINICS IN U.S.A.

THE Association for the Prevention and Relief of Heart Disease (370, Seventh-avenue, New York) has recently issued a pronouncement as to the requirements considered by its members to be essential for an ideal cardiac clinic. These requirements are briefly as follows:—

Medical Organisation.

Ward Service.—Hospital wards should be available for an initial study of each case admitted to the cardiac clinic, for such other investigation as is indicated, and for treatment of patients unable or too ill to receive proper care at home. The cardiac clinic should function as a return clinic for cardiac cases treated in the wards. (The standards referred to below presuppose a ward service in direct connexion with the clinics.) The cardiac clinic should operate as a special section of a general medical clinic to which it should offer aid in diagnosis and treatment. Some members of the staff of the cardiac clinic should have ward duties, and all members ward privileges, with encouragement to follow up cases admitted to wards.

Responsibility for Patients.—When a patient is enrolled in more than one special clinic (cardiac, syphilitic, &c), the responsibility for his proper care must be placed upon one of these clinics, preferably the clinic which provides for the most urgent need.

Staff.—The staff should be assigned definite hours for attendance in the clinic. The chief of clinic should be of rank corresponding at least to that of an assistant-attending physician to the hospital. He should be an internist or pediatrician, with a broad clinical training and a special knowledge of cardiac problems. He should be responsible for maintaining the medical standards, and should supervise diagnosis and treatment by juniors. The medical staff should be relieved, as far as possible, of all duties not directly concerned with diagnosis and treatment of patients. Trained assistants for performing the executive, social service, nursing, clerical and technical functions should be provided. Staff conferences, either of the cardiac clinical staff or of the entire medical staff, should be held at least once each month for the discussion of both ward and dispensary cases.

Social Service.

The *Social Service Section* of the associated out-patient clinics has formulated general standards of organisation and function of social service in clinics. Only certain special points are therefore included in their consideration of cardiac clinics.

Medical Social Worker.—The social service worker should be the clinic executive, and should see that all measures concerned with management of the patients are properly carried out. It has been found that one full-time worker cannot care properly for more than 100 active patients. She should be provided with sufficient professional, clerical, and lay assistants, and should be invited to attend staff conferences. There should be provision for privacy for her interviews with patients.

Space, Equipment, and Records.

There should be adequate room for waiting, examination, and for teaching purposes, where teaching is carried on; the services of modern X ray plant, an electrocardiographic laboratory, and a proper clinical laboratory should be

available. Records of history, physical examination, laboratory investigation, treatment, and follow-up notes, including social service activities, should be kept and filed in a manner meeting the approval of the Association.

Admission and Distribution of Patients.

It is advisable, so far as possible, to limit the use of the clinic to patients residing within a specified district, and to limit its efforts to such numbers as may receive the best care, rather than to dissipate limited facilities upon numbers large enough to make the care inadequate. The patient should be treated by the same physician continuously, interviewed by pre-arranged appointment, and be made to understand that they may visit the clinic before the time of the appointment if they feel it necessary to do so. Only patients having potential or organic heart disease should be enrolled in a cardiac clinic, although any patient may be kept under observation until diagnosis is established. No patient's name should appear on the active list of the clinic if the patient has not attended within six months.

Standards: Examination and Treatment.—Each patient should have a complete physical examination on admission and receive such examination as is necessary on subsequent visits. All doubtful or unusual cases should be seen by the chief of clinic or consulting physician. All cardiac patients should remain permanently under the care of the clinic, even if free from symptoms. There should be at least one physician for every 50 active patients enrolled in the cardiac clinic. Patients should receive instruction list, diet lists, &c., in addition to verbal directions. The amount of medicine dispensed should be sufficient to obviate the return of patients for medicine only. Close coöperation should be maintained with the agencies providing convalescent and country care, and with schools, social agencies, day nurseries, &c. There should be facilities for consultation in all required specialties. It is recommended that a hospital for chronic cardiac disease be available to care for patients in need of prolonged hospitalisation.

Diagnosis of Circulatory Diseases.

Each diagnosis to be complete should include one or more titles from each of the groups, A,* B, C, D. Groups E and F, of course, demand nothing but ætiology.

A. *Ætiology.*—(1) Unknown; (2) "rheumatic": acute rheumatic fever, chorea, growing pains, tonsillitis, pharyngitis, others, as purpura, and erythema nodosum, &c.; (3) syphilitic*; (4) bacterial* (specify bacterium if possible); (5) thyroid*; (6) toxic: bacterial, mineral, and vegetable (specify if possible); (7) neurogenic; (8) general systemic disease (specify the disease—e.g., general arterio-sclerosis); (9) traumatic.

B. *Structure.*—(1) Atrophy of heart; (2) enlargement of heart; (3) hypertrophy of heart; (4) cardiac infarction; (5) rupture of heart; (6) cardiac thrombosis: (*a*) auricle, (*b*) ventricle; (7) myocarditis, acute; (8) myocarditis, chronic fibrous; (9) fatty infiltration; (10) fatty degeneration; (11) tumour of heart; (12) endocarditis: acute, chronic; (13) cardiac valvular disease, aortic insufficiency, aortic stenosis, mitral insufficiency, mitral stenosis, pulmonic stenosis, tricuspid stenosis; (14) congenital abnormality (specify lesion if possible); (15) pericarditis: acute, fibrinous with effusion, pneumo-pericardium; (16) adherent pericardium; (17) pericardial effusion; (18) tumour of pericardium; (19) aortitis: without dilatation, with dilatation; (20) aneurysm (specify affected vessel or heart); (21) embolism (specify affected vessel); (22) thrombosis (specify affected vessel); (23) arterio-sclerosis, general; (24) arterio-sclerosis (specify locality as, coronary arteries, cerebral arteries, &c.); (25) arteritis (specify locality); (26) periarteritis (specify locality); (27) no circulatory disease; (28) no cardiac disease; (29) undiagnosed.

C. *Pathological Physiology.*—(1) Regular sinus rhythm; (2) vagal arrhythmia: sinus arrhythmia, sino-auricular block, simple bradycardia, ventricular escape; (3) premature contraction: auricular, nodal, ventricular; (4) simple tachycardia; (5) paroxysmal tachycardia: auricular, nodal, ventricular; (6) auricular flutter: paroxysmal, chronic; (7) auricular fibrillation: paroxysmal, chronic; (8) auriculo-ventricular heart-block: partial block, (*a*) prolonged conduction time, (*b*) dropped beats, complete block; (9) intra-ventricular block; (10) neuro-circulatory asthenia; (11) valvular incompetency: mitral, tricuspid, pulmonic, or aortic insufficiency; (12) hypertension.

D. *Functional Capacity.*—(1) Patients with organic disease able to carry on ordinary physical activity; (2) patients with organic disease, with (*a*) activity slightly limited, (*b*) activity greatly limited; (3) patients with organic disease unable to carry on any physical activity—i.e., who must remain in bed or in a chair.

E. *Patients with Abnormal Signs and Symptoms.*—Not believed to be due to organic disease: this diagnosis to be "not cardiac—Class E."

F. *Potential Disease.*—Patients without circulatory disease whom it is advisable to follow because of presence or history of an ætiological factor.

Remarks.

The importance of preventive measures in the treatment of heart disease is well recognised; but, in order that such measures may achieve the best results, coördination is essential. Such coördination is the aim of the Association for Cardiac Clinics. Uniformity in diagnosis and treatment in different clinics would, in a short space of time, provide a mass of material capable of yielding valuable information, and so help to hasten the advance of knowledge concerning different cardiac conditions. Both "ideal" and "minimal" requirements are outlined in the present scheme. These, no doubt, may subsequently be found to require modification; for any scheme, however perfect in theory, can generally be improved as the result of experience in practice. Proper stress is laid on the importance of coöperation between the clinics and hospitals, and on the limitation in efficiency imposed by excessive numbers of patients at individual clinics.

In the matter of diagnosis, the scheme presents several important features. The grading of "functional capacity" is eminently practical, the "pathological physiology" can be determined with certainty; but, when one comes to ætiology, the classification is much more difficult. There are, for example, many cases of heart disease which would be labelled by one physician "rheumatic," and by another "of unknown origin." The latter may be an observer no less competent than the former, but he may feel that the evidence is insufficient to justify such a definite conclusion. Unless, therefore, uncontrovertible evidence be available, it would appear that the advancement of knowledge can best be attained if the temptation to attach a definite ætiological title be avoided, and if a considerable percentage of cases be allowed to remain, temporarily at any rate, in the group of "unknown origin."

* In the case of each of these conditions, it should be noted whether the ætiological factor is still *active* or is *inactive*—e.g., (A) Active syphilitic. (B) Aortitis with dilatation, aneurysm of ascending aorta. (C) Regular sinus rhythm. (D) Class II.a; or (A) Inactive rheumatic (acute rheumatic fever). (B) Valvular disease, mitral insufficiency, mitral stenosis. (C) Auricular fibrillation. (D) Class II.b.

DONATIONS AND BEQUESTS.—The late Mr. Alfred William Thomas Bean left by will £1000 to the Cottage Hospital, Bexley Heath; £100 each to St. Mary's Hospital, Paddington, Queen Charlotte's Lying-in Hospital, the Consumption Hospital, Brompton, the Hospital for Sick Children, Great Ormond-street, and the Paddington Green Children's Hospital; and £50 each to the Society for the Prevention of Cruelty to Animals and the Society for the Prevention of Cruelty to Children.—By will the late Alderman Francis Day Veasey, of Huntingdon, left £1000 to the Huntingdon County Hospital.—During the past month the Manchester Children's Hospital has received sums totalling £2084, which includes £1000 from the Heath House Orphanage for the endowment of a cot, £225 legacy from the late Mrs. E. Shufflebotham, and £572 from the joint committee of the Manchester and Salford Hospital and Saturday Funds.—The late Sir John William Kelk, London and Thetford, left by will among other bequests £1000 each to St. Mary's Hospital, Paddington, the Middlesex Hospital, and St. John's Hospital for Diseases of the Skin, Leicester-square.—The late Colonel John Goode Johnson, of Stockport, bequeathed £1000 to Stockport Infirmary and £100 each to the Stockport Institute for the Blind, Deaf and Dumb, Ragged and Industrial School, and Sick Poor Nursing Association.—During the past month the St. Mary's Hospitals, Manchester, received £236 in donations. Local and other hospitals benefited to the amount of £500, the proceeds of the Manchester county police sports. As a result of the Rochdale county police sports £1095 will be distributed to Oldham, Rochdale and district charities and police institutions.—By the will of the late Mr. John Black, of Toxteth Park, Liverpool, the charities of this city will benefit to the extent of £15,000; among the bequests are £1500 to Liverpool Royal Infirmary, and £1000 each to the Royal Southern Hospital, David Lewis Northern Hospital, Children's Infirmary, Myrtle-street, Hospital for Consumption and Diseases of Chest, Stanley Hospital, and Seamen's Orphanage.

THE LANCET.

LONDON: SATURDAY, AUGUST 4, 1923.

LOCAL HEALTH ADMINISTRATION.

SPEAKING at the annual banquet of the British Medical Association last week, Captain WALTER ELLIOT said that one of the great tasks of Britain now was to restore local administration, once the pride of this island. The peculiar qualities of the English, the Scottish Secretary added, might be best seen in the genius they displayed in getting other people to work for them. The issue of the report by consultative councils of the Scottish Board of Health on a reformed local authority for health and public assistance [1] is a reminder that although an English Ministry and a Scottish Board of Health have been formed, unifying to a certain extent central administration, local public health administration remains in an unsettled condition. The necessity for reform was made manifest by the reports of the Royal Commission on the Poor Laws. Both minority and majority reports of this Commission recommended abolition of the boards of guardians, and had there not been disagreement on important points of detail the subsequent history of public health insurance in this country might have differed greatly from the actual course of events. By means of the Maclean Committee a *modus vivendi* between these reports was agreed upon, but although promises were made of action in the direction of the report of this Committee, little yet has been done of which the public know. The report of this Scottish Committee may, it is hoped, bring the problem once more within the range of practical politics, and Scotland, as has happened not infrequently in the past, may show England the way to more efficient and therefore more economical public health administration. But it must be remembered that the difficulties in England are immeasurably larger, because of the numbers concerned, and the complexities left by previous good and pioneer work.

The two main needs for reform, as stated in the report, are exemplified as fully in English as in Scottish local authorities. There is overlapping and waste, due to the distribution of the local administration of the health services among several different authorities in each area, and many of the administrative units are too small to carry out efficiently the powers and duties laid on them by Parliament. The drastic character of the recommendations of this Consultative Council may be gathered from the fact that their proposals would eliminate for the major purposes of health administration 98 district committees and 194 out of 201 boroughs having a population of less than 50,000, while 869 parish councils and 27 district boards of control would cease altogether. It is very properly pointed out that so far from these proposals interfering with local administrative autonomy, more representative and more powerful local authorities would be created, justifying greater freedom in the exercise of their functions. Evidently these proposals cannot be carried out without opposition. Every small local authority has a vested interest in continued existence, though Parliament should be strong enough to resist the pressure of opinion inimical to reform. The transfer of the work of local insurance committees to committees of the new authority implies a change in the original plan of the National Insurance (Health) Act, removing the redundant insurance committees while arranging for the coöption on the insurance committee of the local authority of members of bodies specially interested in this work. The proposed transfer of the functions of parish councils to the county councils and town councils will simplify considerably the work of public assistance and eliminate much of the overlapping of public health and Poor-law work which now exists.

The medical profession are much concerned in the reforms proposed in this report. It is greatly to their advantage and much more so of their patients that relationships with official bodies should be simplified, that official medical work should be more accurately defined, whether parochial or insurance work or public health work proper, and that medical men and their organisations should be able to approach a single authority competent to deal with all the branches of work in which the medical profession are specially concerned. Here and there, no doubt, a forceful and tactful personality makes up for the shortcomings of a bad system: in one place, as at Portsmouth, a local hospital surgeon is chairman of the health committee; in another, a general practitioner presides over the insurance committee; in a third, the medical officer of health is the pivot of all the health activities of the sanitary area. But mind cannot so triumph everywhere over recalcitrant matter, and a remodelling of the framework of public health is a first necessity for a community that desires medical knowledge and experience to be translated into the elements of healthier living. We know that the Ministry of Health is making headway, but we have a feeling that the problems entailed by the centralisation of such great and varied activities are not appreciated by our readers—and certainly not by the public.

[1] Reports by Consultative Councils on a Reformed Local Authority for Health and Public Assistance, price 1s. 3d.

PRECIPITATION TESTS FOR SYPHILIS.

FAIRLY soon after the introduction of the Wassermann test, in the endeavour to elucidate its mechanism and as part of the controversy which arose as to its nature, it became apparent that out of a mass of work the general fact was emerging that under many conditions syphilitic sera would give precipitates more readily than would normal sera. The possibilities of this fact are considerable. Though one of the most trustworthy of all clinical-pathological diagnostic measures, the Wassermann test contains a large number of variable factors, which must be carefully adjusted to render results of constant accuracy. The test consists of two parts. In the first the syphilitic serum and antigen are brought together in the presence of complement, and in the second the existence, or disappearance, of this complement is sought for by adding blood corpuscles and the appropriate specific hæmolytic serum. We hold the view that the essential of the test is the production of a precipitate between the syphilitic serum and the antigen, which is a colloidal suspension of lipoid particles. In the presence of syphilitic serum the physical state of this colloid differs in an only partially

known fashion from its state in the presence of normal serum, and in the former case it is particularly favourable to the adsorption and inactivation of complement, which thus disappears from the mixture so far as its subsequent demonstration is concerned. It is therefore obvious that if we could detect this alteration in the antigen visually we should be able to dispense with complement, hæmolysin, and blood cells, all variable factors, and not only simplify the test but probably render it more accurate. This is the end striven for by precipitation tests, which were first popularised in practicable form by SACHS and GEORGI and have since been modified in various directions by others. The essential question which remains to be answered, assuming the above theoretical explanations to be correct, is: Is the visual method as delicate a one for detecting the formation of a precipitate between serum and antigen as is the fixation of complement? This is the main point of interest in comparisons of the two tests, such as those we recently published. It is an important point since upon its answer will depend the form of the serum test for syphilis which should be adopted in the immediate future. In this connexion we would point out that it is already abundantly proven that a strongly positive Wassermann reaction corresponds, for all practical purposes, to a strongly positive precipitation test, but that in both cases the shading-off from the positive into the negative is not an abrupt process. Research therefore should be directed not only to the finding of conditions which will magnify the positive reaction and minimise such change as occurs in negative cases, but towards the weakly positive, the evolving, and declining cases. Comparison of the two tests with the clinical condition, which must always be closely watched, will yield information of the most value as to their relative merit.

PUBLICATIONS WHICH "TEND TO DEPRAVE."

A FEW days ago in the Court of Appeal Mrs. MARIE STOPES succeeded in obtaining the fruits of her libel action against Dr. H. SUTHERLAND and his publishers. There is no occasion now to reopen the controversy over what is popularly known as birth control; the views of both sides were sufficiently expounded at the original trial by witnesses of considerable weight and known sincerity. Nor is there any need to comment on this unfortunate litigation wherein, when the jury had duly answered the questions submitted to it, what should have been the end of the case proved to be merely the starting-point for fresh legal argument. The controversy, however, bore indirectly upon a point of some interest—namely, the immunity of technical publications from the criminal law as to the publication of matters obscene or indecent. Dr. SUTHERLAND had *inter alia* written of certain of Mrs. STOPES's publications the remark that "CHARLES BRADLAUGH was condemned to jail for a less serious crime." The comparison is a reminder of the change in public standards over the period of half a century. To publish any obscene or immoral book is a criminal offence—a common-law misdemeanour. The judicial test of obscenity is "whether the tendency of the matter is to deprave and corrupt those whose minds are open to such immoral influences and into whose hands a publication of this sort may fall."

Legal authorities of repute still lay down the principle, enunciated more than 50 years ago by Chief Justice COCKBURN, that a medical treatise with illustrations necessary for the information of those for whose education or information the work is intended may, in a certain sense, be obscene, and yet will not give rise to criminal proceedings, though, if such illustrations are "exhibited for anyone, boys and girls, to see as they pass," it may constitute an offence. The immunity, in fact, depends upon the circumstances of the publication. Certain observations during the recent libel action are a judicial recognition of a relaxation of the public standard of what tends to deprave. In 1877 CHARLES BRADLAUGH was convicted, along with Mrs. BESANT, of the criminal offence of publishing KNOWLTON's tract "The Fruits of Philosophy," an essay on the restriction of the population. The jury declared that the book was calculated to deprave public morals, and the Lord Chief Justice of the day condemned both defendants to be imprisoned for six months, to pay a fine of £200, and to enter into recognisances for five years to be of good behaviour—good behaviour including the withdrawal of the book. Now let us listen to something said by Lord Justice SCRUTTON the other day:—

"In 1877 it would have been almost impossible to discuss publicly a subject of admitted importance, the causes, effects of, and remedies for venereal diseases, but since the war the most respectable newspapers have opened their columns to the plainest discussion of these matters and the most respectable persons have taken part in those discussions. The merits and methods of artificial birth prevention seem to me to stand in a similar position. In 1877 it would have been impossible to discuss them publicly; in 1923 there is probably a great change in public opinion as to the necessity of discussion coupled with great difference of opinion as to the desirability of such methods."

If CHARLES BRADLAUGH had published KNOWLTON'S book to-day, would he have been prosecuted, much less convicted and sentenced to imprisonment? Doubtless the answer would depend on the circumstances of the publication. Propagandists do not always discriminate, and the old tag *maxima debetur pueris reverentia* is not yet obsolete. If we protect our schoolboys from the attentions of betting touts and money-lenders, we need not expose them to those of the booksellers who specialise in furtive pornology. Writings on birth control which are very far from belonging to that discreditable traffic have in recent years been treated by police-court magistrates as having a tendency to deprave. Such decisions are not easily harmonised with the greater latitude to which Lord Justice SCRUTTON gives testimony. As every magistrate is entitled to take his own standard in these matters, the position is none too clear. The policy of Parliament seems to be towards greater control. It will be remembered that in 1917, in suppressing quack treatment of venereal disease, the circulation of advertisements dealing with such treatment was prohibited. The proposed Judicial Proceedings (Regulations of Reports) Bill, designed to eliminate indecent details from the reports of divorce and other proceedings, is a significant movement in the direction of suppressing matters "tending to deprave."

PHYSICAL TRAINING IN THE NAVY.

THE Navy has, as we know, done a great deal to help the British Medical Association meeting of this year, and in the afternoon of July 25th the members of the Association were invited to the Royal Naval School of Physical and Recreational Training to witness a demonstration of the education there given. In a fine gymnasium, on a floor whose boards recalled

the whiteness of the old Navy's decks, were seated motionless a large squad of sturdy young seamen, who were later to demonstrate the work of the school in which they are undergoing the six months' course for instructors. The Commander-in-Chief having arrived, Sir PERCY BASSETT-SMITH voiced the pleasure and gratitude of the Association at being invited to the demonstration. Surgeon-Commander K. DIGBY BELL explained the purposes of (*a*) physical training, to develop the recruit, teach him discipline, and make him anxious for more training; (*b*) physical exercise, to make him thereafter ever more and more fit; and (*c*) recreational training, to encourage the team spirit and develop alertness and other desirable qualities. Then were shown, first free standing exercises to show the gradually increasing severity of the practices, and the systematic attention paid to the equal use of all the muscular systems; these together teach a man to think and to strengthen his body, and are followed by activity exercises which make him supple. This is a school for instructors, and their teaching, and the teaching of judges and referees, were explained and then illustrated by a sabre *v.* sabre combat, and an exhibition boxing match, in which the combatants successively and by order did all the horridest things, as kidney and rabbit punches, and got freely knocked down, according to plan. Surgeon-Commander DIGBY BELL being here replaced as lecturer by a lieutenant-commander, clever and daring exhibition work was shown on the horizontal and parallel bars, and on the horse, this last without any spring board. Two instructors showed how men were taught in self-defence training to fall safely, by falling protectively, not on their bones, but on the muscles between the joints, and they illustrated how skilfully an opponent, even when attacking with a knife, could be countered and overset by an expert. Then the recreational games were shown, many of them. A ship is small, and has many men; they must take little room. They are extremely exciting, very popular, and no one is a good instructor who cannot invent a new game or make his squad interested in an old friend. Thus, two squads, "red" and "green," each of ten men, competed against one another; while the "reds" tossed a ball from one to the other round an inner circle, "green" with eager feet were running a relay race round them, and the instructor announced that simultaneously "red" had made 105 catches. Then "red" raced like mad round the catching "green" who, alas! owing to a dropped catch, and time so wasted, only scored 88 catches in their period. One expected that he who missed heard a good deal afterwards about his mistake, and would be very effectively stimulated to do better next time, and that is the object of these games, to strengthen the team spirit and secure accuracy of effort. After the gymnasium the swimming-bath, whose milky-blue water evidenced its careful disinfection: here swimming training and pretty diving off trapezes brought the demonstration to a close. The thanks of the visitors to the Navy was expressed gracefully to the Commander-in-Chief by Dr. LOCKHART STEPHENS, the Vice-President of the Southern Division, and the officers of the Naval Barracks (H.M.S. *Victory*) then kindly entertained the party at tea after a most interesting two hours which showed what great use was now being made by the Navy of its capable medical officers in the training of the Service, educating the personnel to keep themselves always in the best of physical condition, and ready to deal whatever may be before them of unforeseen, unimagined conflicts and emergencies.

THE LANCET CENTENARY DINNER.

THE dinner in celebration of the completion of the hundredth year of THE LANCET will be held at the Hotel Victoria, Northumberland-avenue, London, W.C., on Thursday, Nov. 29th, 1923, and not as previously announced on Nov. 28th. Mr. Neville Chamberlain, the Minister of Health, has signified his intention to be present.

Annotations.

"Ne quid nimis."

NATURAL AND ARTIFICIAL SUN CURE IN TUBERCULOSIS OF THE LUNGS.

THE brilliant results obtained by intensive sun treatment in so-called surgical tuberculosis not only at high altitudes, but also in low-lying districts, have for many years been recorded; but the results on tuberculosis of the lungs have been, in many hands, disappointing, and have led to avoidance of the treatment by many physicians, and even to its condemnation by some as a dangerous and unjustifiable form of therapy. Dr. Johannes Schürer,[1] of Mülheim, combats this idea as a false one, maintaining that the action of the sun is not only on the diseased organ or part, but mainly on the whole body. The old tradition that direct sunlight is dangerous in cases of phthisis still holds sway in the minds of the majority of the medical profession, in spite of the fact that Finsen reported good results 20 years ago, and that in 1903 Nizza used the sun cure methodically, and demonstrated that the sunlight stimulated the nervous system, producing dilatation of the blood-vessels, lowering the blood pressure, and favouring the healing of the foci in the lungs. In the sanatorium treatment developed during the last 50 years, the action of direct sunlight plays no part, and no provision is made for it in the vast majority of sanatoriums. In 1921 Hoffner[2] wrote: ". . . . it was attempted to make the sun the cure for phthisis. The experience of all observers was, however, that the effect was harmful. . . . Existing latent processes became active," and he expressed the opinion that in every condition of tuberculosis of the lungs sunbaths were to be avoided. Bacmeister[3] came to the same conclusion, stating that "the most dangerous is the simple lying in the sun in the first tempting days of spring, or after a long period of dull weather. Each year a number of patients come to me who in this way have developed new foci, pleurisy, hæmoptysis, and other complications." Koch[4] reports similar cases of sunbaths undertaken by the patient without medical supervision resulting in a rise of temperature, increased cough, and hæmoptysis.

Nevertheless it would be a great mistake to confuse such unsupervised, unsystematic, and over-dosed sunbaths with a true sun treatment. Dr. Schürer points out that spontaneous self-treatment gives the effect rather of a "sunburn," and that good effects can only be obtained by means of exact medical observation and supervision. His own experience has been mostly on phthisical patients with well-marked lesions, too severe to be sent to the outlying country sanatoriums. The sunbaths were taken on the roof of the Evangelisches Krankenhaus in Mülheim, sheltered on two sides from wind currents. The roof of any town hospital might well be put to such use, and has the additional advantage of getting the sun at all times of the day, and of not being overlooked by other buildings, two objections to most verandas. The only cases which were not given heliotherapy were those with marked cachexia and high fever, those who were too weak to wash themselves, and those with large cavernous or pneumonic processes. On the other hand, hæmoptysis was not considered a contra-indication. In every case the patient was slowly acclimatised to the sunshine, starting with five minutes, with the legs only exposed, and slowly increasing daily with exposure of the arms and chest until in 12 days a complete sunbath of an hour's duration was allowed. In 24 days two hours were reached, and in some cases three hours, the time of the day chosen, and the length of the treatment ultimately depending on the weather and on the time of the year. It is

[1] Deutsch. med. Wochens., June 1st, 1923.
[2] Strahler-Ther., 1921, xii., 819.
[3] Zschr. f. ärztl. Fortbild., 1921, xviii., 284.
[4] Strahler-Ther., 1922, xiii., 134.

obviously impossible to lay down any fixed regime in a variable climate. As an indication of the dose, the subjective sensations of the patient were largely taken into account and were found to be more important than the exact number of minutes that the treatment lasted. In this respect it is essential to obtain the coöperation of an experienced nursing staff. In 63 cases treated by Dr. Schürer no ill-effects were noted, in no cases did the temperature rise more than 0·2–0·3° C., there was no increase in the quantity of sputum, and no case showed signs of new foci or activity in an old one as a result of the treatment. Out of his cases 11 had previously had hæmoptysis, one 14 days before the commencement of the cure. In no single case did hæmoptysis occur during or after the treatment. The blood pressure was found to be usually slightly lowered during a sunbath, but was not constantly so. No increase was, however, observed, and this is additional evidence that heliotherapy bears no direct relation to hæmoptysis. The results of the treatment, when compared with those of the ordinary hospital treatment, were remarkably good, improvement taking place in severe cases which would have been given up under ordinary circumstances. In unfavourable weather artificial sunlight was given, so that patients who had become acclimatised to the sunlight should not lose their immunity and have to begin all over again.

Dr. H. Gödde,[5] of Honnef am Rhein, reports on the action of the quartz lamp in tuberculosis of the lungs. He radiates the chest and back three times a week, gradually increasing the duration. He has treated 655 cases during the last eight years, and points out that the treatment is not without danger, although if properly regulated it becomes a valuable adjunct to other forms of treatment. In 57 of his cases he observed an unmistakable reaction, with an increase in the physical signs in the chest. Cases of all degrees of severity were treated, but of those showing an unfavourable reaction, only 14 had tubercle bacilli in the sputum. In most of the cases it was wellnigh impossible to say if the bad effects were due to the quartz lamp, or would have come spontaneously or were due to some other factor; but in some of the cases there was a definite relation between the treatment and unfavourable symptoms, which could be produced at will in the form of an experiment. An illustrative case was that of a man aged 19, suffering from dry pleurisy, nodular fibrosis in the lungs, and tuberculous epididymitis. The temperature was normal, but on the evening of the third radiation rose to 38·5° C., and on the following evening to 39·5° C. He had a severe cough and a marked pleural rub. The temperature fell in 15 days. After 16 days free from temperature, the radiation was repeated. After two minutes the temperature rose to 37·3°, after four minutes to 37·5°, and after eight minutes to 40°. Well-marked signs of foci in both apices appeared, which, in spite of many weeks in bed, never quite disappeared during the whole course. The temperature returned to normal in 27 days. Hæmoptysis was noted in many cases after radiation, and Dr. Gödde is of the opinion that the treatment should not be used in advanced cases. Exact observations should be kept of the temperature and of the general condition, and although it is safe to treat patients ambulatorily so long as there is no reaction, on the first sign of any reaction they should be confined to bed. When they are under careful supervision he does not consider that a reaction is detrimental, but rather that it leads eventually to an improvement in both the local and general condition.

THE NOTIFICATION OF TUBERCULOSIS.

A LETTER has been sent personally during the week by the Ministry of Health to private practitioners throughout England and Wales reminding them of their statutory duty to notify cases of tuberculosis as soon as the diagnosis is made. This duty was enjoined by the Public Health (Tuberculosis) Regulations of 1912, but it is common knowledge that in some areas a large proportion, sometimes nearly one-half, of the persons dying from tuberculosis had not been previously notified as suffering from that disease. The practitioner is, of course, absolved from the duty if he has reasonable grounds for believing that the case has already been notified to the sanitary authority, but the Minister of Health puts upon him the onus of ascertaining this fact in case of doubt. Early notification of tuberculosis is rendered difficult by the fact that, in spite of all our progressive knowledge, early diagnosis is in many cases still difficult, and unfortunately there are persons who do not consult a doctor until the disease is in an advanced stage. Under the Regulations the notification is strictly confidential, and the fact of a patient suffering from tuberculosis becoming known to employers or neighbours through the medical officer of health can be disregarded. Notification is ordinarily followed by a visit from the tuberculosis officer; where in a particular case the practitioner considers this unnecessary it is now open to him to arrange that this visit shall be dispensed with. No doubt the circular letter will help in clearing up points which have so far stood in the way of wholehearted observance of the Regulations.

APPENDICITIS CAUSED BY THE ASCARIS LUMBRICOIDES.

IN view of the rarity of parasitic infection of the appendix cavity in this country a case of ascaris appendicitis recorded in the June number of the *Irish Journal of Medical Science* by Dr. Kathleen Portley, is noteworthy. In February last a boy aged 4 was sent to St. Vincent's Hospital as a case of acute appendicitis. Ten days previously the patient had an acute attack of abdominal pain accompanied by vomiting and a rise in temperature which fell to normal in three days, the pain remaining. On admission the abdomen was very rigid, and there was general abdominal tenderness, most marked over McBurney's point. At operation, by Mr. H. S. Meade, the mesentery was found to be studded with tubercles with a slight amount of pus in the right iliac fossa, and wandering free in the peritoneal cavity was a worm about 6 inches long of the *Ascaris lumbricoides* type. There was no sign of perforation of the intestine, but the ascaris was found to have emerged from the alimentary canal by perforating the tip of the appendix, which was slightly inflamed. Appendicectomy was followed by a speedy recovery, anthelminthics being administered during convalescence. Dr. Portley, in examining the literature, has found no record of a similar case, though the presence of ascaris in gall-bladder and ducts has often given rise to serious complications.

A NEW HEALTH INSURANCE CODE.

EARLIER in the year, when urging that the Public Health Acts should be reduced into one complete and up-to-date document, we mentioned the probability that this process would first be applied to the law of National Health Insurance.[1] The anticipation has been justified. A bulky House of Lords Bill has just appeared. It can make no immediate progress, but, when Parliament reassembles, once the Bill has passed the scrutiny of the Joint Committee on Consolidation Bills, it should speedily become law. The Bill consists at present of 133 clauses and six schedules. On a casual examination it seems to be well planned and sensibly arranged, so that laymen as well as lawyers will be able to find their way about it. All the old law is to be repealed, with the usual saving clause that outstanding rules and regulations (and it is often the regulations rather than the Act itself which most concern the medical practitioner) made under any repealed Act shall continue in force as if made under

[5] Deutsch. med. Wochens., June 15th, 1923.

[1] THE LANCET, 1923, i., 857.

the corresponding provisions of the new law. As the new Bill appears to be pure consolidation and not to include any proposals for amendment, its passage through Parliament should be the easier. In introducing it into the House of Lords on July 26th the Earl of Onslow stated that, as soon as the Bill was passed, the consolidation of all statutory regulations on the subject would be undertaken. He also announced that a consolidation of the Housing Acts was intended. Meanwhile it is to be hoped that the Public Health Acts are not being forgotten. Their confusion is greater than that of the Health Insurance Acts, and they had a prior claim to be considered for consolidation.

THE TREATMENT OF VARICOSE VEINS: A NEW OPERATION.

VARICOSE veins, as is well known, occur in all classes, affecting both men and women, and in those following both sedentary and active occupations. Mr. Philip Turner[1] points out that while it is generally agreed that the essential factor is an increase of pressure in the veins, it must be admitted that in the greater number of cases presenting themselves for treatment no definite cause for the increase in pressure in the veins and no obvious cause for impeding the circulation can be shown. He offers an ingenious suggestion as to the cause of the obstruction to the return of blood in cases where it is not obvious, and describes a method of operative treatment which he has found successful. He believes that in a considerable proportion of cases of varicose veins, especially in those where the patient follows an occupation requiring prolonged standing, the real cause of the trouble is an obstruction to the flow of blood where the internal saphenous vein near its termination passes through the saphenous opening, leaving the subcutaneous tissues to join the more deeply placed and better supported femoral vein. He recalls the anatomy of the saphenous opening bounded on the outer side by the iliac portion of the fascia lata which has a sharp well-defined edge known as the falciform border. The upper wall of this (the superior cornu) turns inwards superficial to the femoral sheath to join Poupart's ligament. The lower portion, known as the inferior cornu, curves inwards, deep to the termination of the internal saphenous vein but superficial to the femoral sheath, to become continuous with the pubic portion of the fascia lata which covers the pectineus and adductor longus muscles, and is attached to the ilio-pectineal line of the pubis. Though there is no sharp alteration in direction, the internal saphenous vein here crosses the well-defined inferior cornu of the falciform edge and joins the femoral vein on a deeper plane, the sharp fascial margin intervening between the two vessels. This is a relationship where, according to Mr. Turner, some factor may easily produce a slight but definite degree of obstruction, which, acting continuously or intermittently over long periods, may produce far-reaching results. This additional factor is, he suggests, increase in the tension of the fascia lata. In the sitting or recumbent position the fascia lata is relaxed; in the erect position, on the other hand, the fascia lata is tense, and so also must be the sharp falciform edge with its superior and inferior cornua, the latter between the superficial and deep venous trunks. The obstruction need not be complete: a slight degree of interference acting over a long time will be quite sufficient to overfill the veins, to cause them to dilate, and eventually to become varicose. After a time the weakest valves will become incompetent, and then the effect of the increased pressure will be felt still more in the veins lower down in the leg. The localised swelling occasionally seen and known as a saphenous varix Mr. Turner attributes to a localisation of the trouble by a particularly competent set of valves which protects the distal portion. More generally the valves become incompetent, and the back-pressure, increased by the weight of the column of blood, affects first of all the vein and its tributaries below the knee. Another possible cause of obstruction at the termination of the saphenous vein are its tributaries—the superficial epigastric, the superficial circumflex iliac, and the external pudic vein—which are often surprisingly large, and the flow from them being from above downwards is in direct opposition to the flow of blood in the internal saphenous. This opposition to the return of blood in the internal saphenous, though probably trivial in the sitting or recumbent positions, may be of considerable importance in the erect position with a tense fascia lata and margin of the saphenous opening.

Mr. Turner suggests that in the operative treatment of varicose veins it is a wrong principle to excise or obliterate the main trunks of venous return, especially the chief of these, the internal saphenous. If the main trunk is removed a great strain must of necessity be thrown upon the smaller and less important vessels, with the result that they dilate and become varicose. The plan adopted by him is the excision of any large varicose veins. In those cases where it is considered that the varicosity is caused by obstruction at the saphenous opening he also divides the fascia lata from the saphenous opening downwards and transplants the long saphenous vein beneath the fascia, which is then sutured over it: at the same time the tributaries which join the internal saphenous at its termination are divided and ligatured. He does not suggest that this operation should be performed indiscriminately; on the contrary, a careful selection of cases must be made. But in a young or healthy middle-aged person, where other causes are absent, where the saphenous vein is thickened and dilated but not tortuous and varicose, where the varicosity affects the lower part of the internal saphenous and its tributaries, but where the small venous radicles are not involved, success may be expected. Mr. Turner has performed this operation, of which he gives full technical details, some 20 times during the past four years, and the results have been so encouraging that he intends to continue this method of treatment.

[1] Guy's Hospital Reports. London: Henry Frowde and Hodder and Stoughton. Vol. III. Fourth Series. No. 2.

THE SOCIAL WELFARE OF THE INSANE.

IN a pamphlet printed in aid of the Society of the Crown of Our Lord[1] Dr. J. R. Lord has dealt with the problem of the social welfare of the patient in a mental hospital, believing that the time has come to revise the attitude of seclusion resulting from the cloudiness of mediæval thought which still darkens the public outlook in this connexion. Recalling the state of affairs before 1766, when "the doors of Bethlem were finally slammed in the faces of curiosity and wantonness," Dr. Lord states that "one has only to call to mind the disgraceful scenes which often characterise the admission of the public to the hearing of sensational divorce or murder cases to be reminded that there is a section of the public whose appetite for the morbid and unsavoury is insatiable, and there is not a doubt that the mental hospitals have had good grounds for their attitude to publicity." This attitude, however, has helped to maintain the continuity of public ignorance as to what insanity really is, although to say that the insane are treated "behind a shut door" is misleading. Dr. Lord points out that there must be at least 20,000 people employed in mental hospitals, that about 10,000 patients pass through the hospitals each year, and that anyone who gives the name of a patient can gain admission on visiting days; thus it would be difficult to keep anything secret save those personal details which are guarded as a matter of course. Nevertheless, the atmosphere of isolation persists, with detriment to the progress of psychological medicine, and Dr. Lord would have the life of the outside community brought

[1] Social Workers and the Insane. An address delivered before the Society of the Crown of Our Lord in London on May 3rd, 1923. London: Adlard and Son and West Newman, Ltd. 6d.

to bear upon the life of the mental hospitals by means of hospital visitors and social workers.

"Truly a mental hospital is a house of comedy and tragedy. Reasoning and argument have no practical value therein. Only sympathy, kindness, and true friendliness are of any avail. . . . How are the insane kept in a mental hospital? If they decided to go home, home they would go. Our light hospital buildings and the proportionately few nurses would not keep them a moment; yet escapes from asylums are perhaps fewer than from prisons. . . . Bars to windows, physical restraint, &c., are practically unknown nowadays in mental hospitals. The chains are there, however, although not forged from iron or steel. They are much stronger and more effective, being links of kindness and persuasion, the artificer being the doctor and the nurse. So it is not that the ground is barren for the exercise of these virtues."

Every mental hospital ward or group of wards, then, should have its social visitors—level-headed, discreet, and kindly men and women with some idea of mental disorders, who would pay particular attention to friendless patients, and would act as a connecting link between those patients who had homes and their relatives. The onset of mental disorder which leads to a patient's removal from home is often sudden, and the effects upon family affairs catastrophic; here there is obviously a useful avenue of work for the social visitor. Moreover, the visitor would gather valuable information concerning the patient's home environment, which would help the medical officer in his treatment and disposal of the patient. Dr. Lord speaks of the great difficulty of arriving at the truth in cases of mental disorder, the relatives being frequently unwilling to disclose information; here the social visitor's evidence would materially assist the case. Dr. Lord quotes the successful experiment begun at Horton Mental Hospital, Epsom, in June, 1922, when Miss E. M. Dale was appointed as hospital visitor. Although this lady has limited her activities largely to recently admitted patients and to acute cases, she has also followed up cases sent to the main building, and lately has also been investigating the condition of patients prior to admission. The results have been so successful that the hospital management are keenly desirous of extending such work to the whole building, and for this purpose more helpers are required. This is a beginning. The strength of the movement will be founded on the fact that such visitors will not be officials, and will, therefore, be free from the suspicion with which all official asylum workers are regarded. Dr. Lord closes his remarks with a reference to the already extensive social work of this nature carried on in connexion with State mental hospitals in America, and with the expression of a certainty that before long no mental hospital administration will be considered complete without its hospital visitors and associated workers.

ACETYLENE AND ETHYLENE AS ANÆSTHETICS.

RECENT contributions, both on the continent and in Canada and America, have amplified our knowledge of the anæsthetic action of ethylene and of acetylene. The number of cases so far reported is not great but suffices to show that both these gases are capable of producing complete muscular relaxation in some subjects and can be safely extended over periods of time long enough for most major operations. Both gases are, of course, highly inflammable, and ethylene provides with air an explosive mixture if it reaches the proportion of 4 per cent. Acetylene and ethylene are used from cylinders like those employed for nitrous oxide, and are given together with oxygen. Acetylene is administered in the proportion of 60 per cent. to start with. This is generally increased to 70 for producing full anæsthesia and can afterwards be lowered even to 20 or 30 per cent. in the course of a long operation. The inhalation is said to produce no disturbance of pulse, respiration, or blood pressure. Recovery is described as being remarkably rapid and the proportion of subjects suffering from post-anæsthetic nausea or vomiting small. In the case of ethylene there were 14 instances of vomiting after 92 inhalations. Gauss and Wieland have used acetylene in 220 cases. They precede the inhalation by one or more injections of morphia and scopolamine. The anæsthesia produced by both ethylene and acetylene appears to be comparable with that obtained from nitrous oxide. Wieland believes that this is essentially different physiologically from the anæsthesia of ether and chloroform and the other lipoid-solvent anæsthetics. His argument, however, comprises the disproved supposition that nitrous oxide and oxygen cannot produce anæsthesia unless administered under pressure. This was, of course, Paul Bert's belief, but it has been fully shown to be erroneous.

DANGEROUS DRUGS.

IN pursuance of Section 7 of the Dangerous Drugs Act, 1920 (10 & 11 Geo. 5, cap. 46) a regulation—the Dangerous Drugs (No. 3) Regulation—amending the Dangerous Drugs Regulations, 1921, has been made. Regulation 15 of the Dangerous Drugs Regulations, 1921,[1] will take effect after August 1st, as if at the end of the regulation were inserted the following words:—

"If a foreign ship in any port in Great Britain requires to obtain a supply of any of the drugs in order to complete the necessary equipment of the ship, the master of the ship is authorised to purchase and be in possession of such quantity of any of the drugs as may be certified by the medical officer of health of the port where the ship is (or in his absence by the assistant medical officer of health of the port) to be necessary for the purpose, the quantity not to exceed what is required for the use of the ship until it next reaches its home port. The certificate given by the medical officer or assistant medical officer of health of the port shall be marked by the supplier with the date of the supply and shall be retained by him and kept available for inspection."

THE TREATMENT OF NERVOUS POLLAKIURIA.

A COMPARATIVELY rare manifestation of a psychopathic constitution is frequency of micturition for which no organic cause can be found. A report by Dr. Chavigny in *Paris Médical* for June 30th deals with two such cases, which show how easy it is to go astray in the treatment of this condition, and how, by appropriate treatment, a complete cure can be effected. The first patient was a man, aged 21, whose father had suffered from incontinence of urine, and whose mother and sister were extremely neurotic. The patient had never been seriously ill, and there was no record of nocturnal enuresis beyond the normal limits of infancy. For several years frequency of micturition had become progressively worse, and he had to get up at night five or six times to pass water. There was also pollakiuria by day, and when he could not at once respond to the desire to micturate he experienced severe pain in the lower abdomen, and there was spasmodic retention of urine for some little time. Examination in hospital failed to show any local pathological condition to account for his symptoms, and the history he gave of the treatment he had hitherto received was as instructive as it was full of mistakes. His first medical adviser, consulted in 1921, had diagnosed gravel, and had prescribed the treatment supposed to match this disease. The results were entirely negative. The next practitioner made a rectal examination and diagnosed prostatitis. This, of course, required massage of the prostate, but again no benefit was obtained. The third practitioner consulted decided that the urinary tract was intact, and that the condition requiring treatment was a muco-membranous enteritis. A fourth practitioner found a little cystitis, but was not inclined to prescribe intensive local treatment, regarding the pollakiuria as a concomitant of disordered intestinal functions. Dr. Chavigny, being unable to find any organic disease such as tuberculous cystitis, decided, more or less by a process of exclusion, that the irritability of the bladder was of psychic origin. His first therapeutic essay was a complete failure. For 24 hours the supply of fluids

[1] S.R. and O., 1921, No. 865.

was greatly reduced; the highly concentrated urine irritated the bladder, adding severe pain on micturition to the patient's other urinary troubles. The pollakiuria was not one whit the better for this treatment, which was promptly abandoned. The treatment which was then adopted, and which proved highly successful in both cases, consisted of repeated distension of the anæsthetised bladder by increasing quantities of fluid. First an intravesical injection of cocaine was given, and then 150 g. of fluid were introduced. This treatment was repeated at first every other day, and later every day, the amount of the injected fluid being ultimately raised to 500 g., and the patient being trained to retain this fluid for increasing periods. This re-education of the bladder was completed in 15 days, and the patient was able to leave hospital after a month, by which time he no longer had to get up at night, and required to pass water only four or five times during the day. The record of the second case was also one of rapid and complete recovery. In neither of these cases was there any nocturnal enuresis, and on the rare occasions when enuresis occurred by day it was more or less a voluntary act, prompted by the semi-conscious decision to let the urine escape into the clothing rather than, by waiting for a suitable opportunity to micturate, to excite an attack of pain and spasmodic retention. Whatever the incidence of psychic pollakiuria may be, it is obvious that before this condition is diagnosed, and the treatment described is instituted, all the other possible causes of pollakiuria must be eliminated by a thorough examination.

EXTRAPLEURAL THORACOPLASTY IN PULMONARY TUBERCULOSIS.

A SHORT monograph has recently been published by Prof. H. C. Jacobaeus and Dr. Einar Key[1] on the treatment of pulmonary tuberculosis by extrapleural thoracoplasty. The authors deal with 60 cases, in 15 of which fitness for work, and in 19 definite improvement, were achieved. In 44 of their cases there had been an observation period of at least a year and a half since the operation, and among these 44 patients there were 12 who were restored to fitness for work and freedom from symptoms, and 8 who were definitely improved. It may therefore be calculated that this operation may restore approximately 27 per cent. to comparatively good health, and may effect considerable improvement in 18 per cent. By themselves these figures may not seem very cheerful, but the results achieved well deserve the description "remarkable" when it is remembered that the patients submitted to this treatment had been completely invalided by their disease for several years. Some interesting and rather curious facts emerge from a study of these cases. The average duration of the disease in the cases which benefited from the treatment was 5·15 years, whereas it was only 4·27 years for the unsuccessful cases. This suggests that the acute case does not respond well to this treatment. In 38 cases the left side of the chest was operated on, and among the 22 right-sided cases there were only 6 which responded satisfactorily to the operation. Among the left-sided cases there were, however, as many as 18 successes. Why this should be so is not clear, but the authors note that the late Prof. Saugman and Prof. Sauerbruch's assistant, Dr. Brunner, have also found that thoracoplasty is more often successful on the left than on the right side. Again, there were only 24 male to 36 female patients, and this disparity appears in the statistics of other operators. The reason for this is still a matter for conjecture. One of the most important matters concerned with the selection of cases for this treatment is the standard by which the efficiency of the healthier lung is to be judged. Some surgeons insist on an immaculate record from the healthier lung, or they may make a concession only to such hilum disease as radiologists alone and a few talented percussionists can demonstrate. The authors were less nice in this matter; only in 14 of their cases did the healthier lung appear to be perfectly normal or the seat of only slight hilum changes. In the remaining 46 cases the X rays or the physical examination or both betrayed involvement of the parenchyma of the healthier lung, which in 28 cases was shown to be diseased by both methods of examination. Their experience has taught the authors that it is not so much the extent and localisation of the disease in the healthier lung that matters as its character. If the disease is arrested in this lung, even half the lung may be involved and yet thoracoplasty on the opposite side may be justified.

[1] Weitere Erfahrungen über Thorakoplastik bei Lungentuberkulose. Supplement III. to Acta Chirurgica Scandinavica, 1923. Pp. 88.

A SURVEY OF DISEASES OF THE LUNGS AND PLEURÆ.

THE writers of text-books, and even of text-books which have much merit, may go wrong in two ways: they may set up their own views to the exclusion of all others but without bringing forward the necessary justification, or they may act as impersonal compilers but discharge their task without due judgment. Many writers of the latter class abstract without discrimination, allotting each author the same space with an impartiality which does their powers of criticism no credit. In a recent comprehensive survey[1] of the subject of diseases of the lung and pleuræ the authors have chosen the happy mean between these two extremes, and they have fused their great experiences with those of the most reliable of their fellow-workers. This survey is published as No. 12 of the series of 22 volumes of the System of Medicine, edited by G. H. Roger, Fernand Widal, P. J. Teissier, and M. Garnier. With regard to the relative importance of heredity and infection, they have no doubts; hereditary immunity has never, in their opinion, been proven, and they regard as negligible the part played by heredity in the outbreak of tuberculosis. Their survey of the problem of tuberculosis complicated by pregnancy shows how different is the attitude of the French from that of the German medical profession. In France, the induction of abortion in tuberculous women is regarded with little favour, and it is considered warrantable only in very exceptional cases. The short chapter on the relation of tuberculosis to influenza shows how divergent are the opinions of various writers; whether a physician considers influenza a perfectly harmless or a most sinister complication of pulmonary tuberculosis, he will find himself in excellent company. The authors' discussion of specific treatment reveals the same diversity of opinions, and their own lack of faith in it is betrayed by their comment that the advocates of specific treatments commonly reserve them carefully for slight cases and those which show a definite tendency to spontaneous recovery. The principle, according to this view, is that of rushing to the aid of the victor. The chapters dealing with diseases of the pleuræ are short but full of valuable information, and it is interesting to note that the opinion, formed by Landouzy as early as 1881, that pleurisy *a frigore* is merely a misleading synonym for tuberculous pleurisy has subsequently been justified. Primary rheumatic pleurisy, unassociated with any articular manifestation of "rheumatism," is also regarded by the authors as a figment of the imagination, and nothing but a euphemism cloaking tuberculosis.

[1] Nouveau traité de médecine, pathologie de l'appareil respiratoire. By Dr. M. Letulle, Dr. P. Halbron, Dr. P. Harvier, Dr. M. Pinard, and Dr. L. Ribadeau-Dumas. Paris: Masson et Cie. 1923. Pp. 596. Fr.40.

WE regret to announce the death on July 28th, following an operation, of Dr. Flora Murray, who was for long officer-in-charge of the Endell-street Military Hospital.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

XXXI.

THE TREATMENT OF INFANTILE ECZEMA.

THERE is no condition where the ingenuity of the physician is more taxed than in the treatment of infantile eczema. This is chiefly because we are dealing with a symptom, not a disease, and therefore the methods employed must change from time to time if they are to meet the requirements of the condition as they arise. For this reason the treatment of eczema, either in infants or adults, is to some extent unsatisfactory, but even if it be accepted that we are only treating a symptom, a great deal can be done by proper methods to shorten the course of disease and to bring it to a satisfactory termination.

Since diagnosis must always precede treatment, it is of importance first to take under consideration three conditions; two are properly included under the heading of eczema and the third, a pyogenic infection, is often mistaken for it. This third condition is a variety of impetigo and is found in infants distributed over the buttocks and napkin area as a red moist exuding surface, at the margins of which phlyctenules may be detected, evidence of the streptococcal nature of the infection. In this type of eruption, since we know the cause, the indications for treatment are clear. Strict cleanliness should be observed, the affected parts being kept as dry as possible and the eruption treated with mild antiseptics such as boric lotion, dusting powders containing boric acid, or simple boric ointment. In exceptional cases antiseptics of a more powerful character may be required, but if the nature of the condition is correctly interpreted, the appropriate remedies will suggest themselves and do not require further consideration here.

Seborrhœic Eczema.

The varieties of eczema met with in infants are two—seborrhœic eczema and true infantile eczema. Seborrhœic eczema, in contrast to the other form, is relatively rare, and it differs further in the manner in which it yields to appropriate treatment. The eruption affects certain areas by preference, the scalp and the flexures of the arms and knees; it is also met with behind the ears. The individual lesions tend to be sharply demarcated, the distinction between healthy and diseased skin being clearly seen. On the scalp circinate erythematous areas occur and these are usually covered with greasy yellow scales. Perhaps the most definite evidence of the nature of the eruption is found in its response to treatment, for it will usually rapidly disappear upon the application of weak sulphur or mercury ointments. When the eruption is present behind the ears it may be mistaken for an impetigo, but since both conditions can be treated in a similar manner, difficulty will not arise in deciding what remedy to use in these cases.

Infantile Eczema.

The more common and more characteristic infantile eczema differs in many ways from the above-described dermatoses. In the treatment of this disease many remedies may be employed, and this in itself is evidence of the difficulty of obtaining cure. Like eczema in general, the eruption is wanting in demarcation, the edges being ill-defined and tending to merge into the surrounding healthy skin. The disease occurs during the first two years of life and is characterised by erythematous areas with vesiculation. These vesicles discharge fluid—the eruption weeps—and this fluid coagulates and forms crusts. The regions principally affected are the scalp, cheeks, and forehead, an area around the eyes and mouth being usually spared. The arms, legs, and trunk may also be involved in extensive cases. There is intense itching and this character complicates treatment because the infant, in the attempt to relieve the abnormal sensation, rubs, and thereby aggravates and prolongs the duration of the disease.

As has been pointed out above, the indications for treatment vary from time to time as the disease progresses or alters. While the actual details of treatment are thus difficult to define, the general principles are more exact and may be summarised as follows under three headings: First, the correction of any coccal invasion; secondly, the protection of the parts involved; and thirdly, the employment of remedies which have a specific effect on the disease.

The Correction of Coccal Invasion.—As in many of these cases, owing to the nature of the eruption, the skin is so altered as to become a suitable medium for coccal growth, secondary invasion with pyococci is a common occurrence. It is not possible, however, to treat the condition thus arising with antiseptics as ordinarily understood, for the result would be seriously to aggravate the eczematous process. The particular circumstances may, however, be suitably dealt with by means of the boric-starch poultice, a remedy of great value, especially where much crusting is present. The accumulation of crusts, indeed, of itself demands the use of this remedy, for it is obvious that unless all crusts are removed the ointments, or other remedies employed, cannot come into the necessary intimate contact with the diseased surfaces. The boric-starch poultice thus acts in two ways: first, in removing surface accumulations, and secondly, as a detergent, and although it is not indicated in every case, the improvement following its use under proper circumstances is considerable. To achieve its objects it should be used cold and about one inch thick; apart from these details the exact method of its application is a matter of lesser importance.

The protection of the parts affected with eczema demands consideration. Reference has already been made to the pruriginous character of the disease and to the effects of unchecked scratching. To prevent scratching some form of mechanical restraint is necessary, as, for example, pinning the sleeves to the bed or imprisoning the arms in light splints made of corrugated paper. In putting these methods into operation care should be taken to see that the comfort of the infant is not too much interfered with. Rubbing the head on the pillow is more difficult to check, but the effects of this can largely be neutralised by enveloping the head in a suitable linen cap, adjusted in such a manner that it will not easily slip. It is important to pay attention to these details, for one prolonged bout of scratching or rubbing may undo the results of days of treatment.

The application of specific remedies is perhaps the most important of all measures. In the choice of the remedy indications may be obtained from observation of the state of the eruption. Where there is much erythema lotions such as calamine lotion without glycerine may be employed. It acts largely by its mechanical effect; when applied to a skin surface the water evaporates and thus the area under treatment is cooled and the erythema and itching lessened; the powder remaining after the fluid has evaporated further cools the surface and also affords protection to it. Calamine lotion should be used neither too long nor over too extensive an area. If used too long it will cause chapping and cracking of the parts treated; if used over too extensive a surface catarrh of the alimentary or respiratory tract may be induced, with possible serious results. Ointments are more generally indicated and their use may be said to constitute the principal method of treatment. Generally speaking, only simple applications should be employed, and for ordinary purposes a mixture of boric and zinc ointments in equal parts will be found suitable. There are many cases where nothing more than this will be required. Where, however, the eruption proves rebellious, some application of a more active character is demanded, such as coal tar. Some dermatologists recommend the application of pure coal tar to the

affected area, and if there be no sepsis the result of this treatment is often excellent, but it will generally be found that the tar ointment to be described is preferable. Its composition is as follows: purified coal tar and zinc oxide, of each two parts, corn starch and vaseline, of each 16 parts. This should be used liberally, all old ointment being removed before a new application is made. There are cases where the condition persists in spite of these remedies, and then further investigations must be undertaken. The method of feeding should be inquired into and any error of diet rectified. The defect may often only be determined by an examination of the fæces by an expert.

Protein Sensitisation. — American dermatologists have called attention to the possibility of protein sensitisation in infantile eczema, and have elaborated a system of cutaneous tests to demonstrate this condition where it exists. As is well known, many individuals subject to asthma have suffered from eczema in infancy or childhood, and since, in certain cases at least, asthma is a form of anaphylaxis, it was thought that both conditions could be attributed to a common factor. The skin is scarified, the test protein rubbed in, and the degree of sensitisation determined by the resulting reaction, a wheal with marked erythema or œdema, which may appear within a few minutes, reaching its height in about 15 minutes, being regarded as positive. This method has attracted considerable attention and has, since its introduction, been investigated by many workers. It appears to have a definite value in asthma, but in eczema it has not fulfilled the earlier expectations, and may still be regarded as under trial.

Conclusion.

It will be seen from what has been said above that the treatment of infantile eczema lies mainly in the use of external applications; they may be used in the following sequence: first, simple remedies such as boric-zinc ointment, and secondly, the tar ointment, the formula of which has already been given. If the desired result is not achieved by these remedies, then a complete investigation into the diet of the infant should be undertaken, including an analysis of the stools.

In all cases aggravation by trauma should be guarded against and the use of soap and water to the affected parts avoided. The favourable progress of any case will largely depend upon attention to details. The intractable nature of many forms of the disease is acknowledged, but this should not lead to half-hearted methods. Where the disease is vigorously attacked it will often be found to respond to the methods employed.

H. MACCORMAC, C.B.E., M.D. Edin., F.R.C.P. Lond.,
Physician for Diseases of the Skin, Middlesex Hospital.

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Special Articles.

PROBLEMS OF ACCLIMATISATION.*

BY ANDREW BALFOUR, C.B., C.M.G., M.D., F.R.C.P. EDIN.,
DIRECTOR-IN-CHIEF, WELLCOME BUREAU OF SCIENTIFIC RESEARCH, LONDON.

GENERATIVE FUNCTIONS AND GROWTH.

IN a consideration of this kind the effect of a tropical climate on the generative functions is naturally of great importance. In both male and female there is greater generative vigour in the tropics, but excess in venery is more speedily followed by exhaustion and neurasthenia than is the case in temperate climates. Puberty is attained at an earlier age in the tropics, and in European girls living under tropical conditions menstruation begins about a year earlier than would be the case in a temperate climate. Race, however, is said to play a more important part than climate in the acceleration. Hot climates may upset the menstrual cycle in white women. According to Mackinnon,[38] they sometimes shorten it and increase the menstrual flow. The same author thinks there is some evidence to show that intermenstrual periods are more uncommon in the tropics. In the case of white women arriving in the tropics menstruation may cease for a space to become re-established later. There is little evidence available regarding the effect on the menopause, but it does not appear to be altered.

Leonard Hill states that tropical atmospheric conditions lessen the fertility of European women, and Sir Harry Johnston,[39] speaking of Jamaica, draws attention to the tendency of white women in the tropics to bear fewer children. This is the case, but it is difficult to determine how far climate alone is to blame, as several factors are doubtless concerned. There can, however, be no doubt that life in the tropics does throw a very considerable strain on the generative system of women, though how far this is likely to affect the race springing from them we have at present no means of actually determining.

It is interesting to note that Lenz,[40] writing in 1921 on the phylogenic neurasthenia in East African natives, expresses his belief that the act of will depends upon a hormone supplied by the germ glands and that a tropical climate checks its development. This, of course, is only a hypothesis, but it is significant that more and more observers are directing their attention to the endocrine glands in their endeavours to explain some of these climatic effects.

Turning now to the question of growth, the stimulating effect of tropical conditions upon the machine is only too evident. Growth is as a rule rapid, but is unaccompanied by increase in weight and strength. Hence the "weedy" European child so common in the hot moist tropics. It is more than likely that the heat acts by stimulating the sympathetic nervous system which controls the functions concerned with growth and nutrition.

THE NERVOUS SYSTEM.

Such a consideration leads us finally to the changes induced in the nervous system itself. As has already been said, it is on this system that the chief stress of a tropical climate falls, and this is the system which presents the greatest barrier to white colonisation. Do what you will in the way of abolishing disease and in improving living conditions, you cannot altogether shield the delicate nervous system from the effects of heat. Out of doors, of course, the brain and spinal

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cord can be protected, and it should be noted that Leonard Hill and Argyll Campbell,[41] in a recent paper on heating of the tissues of the body by light and heat rays, have confirmed the utility of helmets and spinal pads by showing that local heating may occur. Again, the eye can be suitably guarded against heat and glare. Indeed, I have known some men so convinced that the eyes were the vulnerable spots, that they thought nothing of going about bareheaded in the hottest weather so long as they were wearing tinted glasses. What is more, they did so with impunity, but they had good heads of dark hair. There is, however, the whole network of peripheral nerves to be considered, and presumably in the case of white field-workers the heat must affect these in some degree. At first tropical heat stimulates, but the stimulation is followed by depression, and if this depression be exaggerated we get the neurasthenic condition so often associated with loss of memory. Here and there mention has been made of the kind of thing that happens. Cook,[42] writing of Uganda, has detailed the symptoms he has noticed in the case of old tropical residents and missionaries: such as tachycardia with a pulse unduly sensitive to posture, increased knee-jerks, sleeplessness, and reaction to small stimuli, as, for example, starting at a sudden noise. All this is evidence of nervous irritability, like the "Punjab head," "Bengal head," and "Burmese head" of the East. I have noticed that what may be called a delayed or interrupted form of cerebration is far from uncommon in the hot weather, while a more serious sign are those outbursts of passion induced by some trivial cause and which Plehn regards as being due to a weakening of control of the higher centres over the lower. There can be no doubt that with marvellous celerity the mole-hill becomes the mountain. Very hot, dry countries are those which try the nervous system, more especially if they are plagued with high winds, and women and children in particular suffer. Indeed, as regards European children in the tropics generally, it would seem that their nervous systems are in a state of unstable equilibrium, so that, quite apart from illness, fretfulness and peevishness are common and a condition approaching hysteria may even be encountered. One is inclined to regard such manifestations as of serious import for the welfare of the race, and the mothers suffer with the children.

GENERAL METABOLISM.

So much for the different systems. Let us glance for a moment at the question of what we may call general metabolism. As far as differences in temperature are concerned, climate has never been regarded as altering to any extent the metabolism of man, but in 1920 de Almeida,[43] a Brazilian physiologist, declared as a result of direct observations that the inhabitants of warm climates, both white and black, have a much lower basal metabolism than that of persons living in cold or temperate regions. For whites he placed it at 30–35 calories per square metre of body surface per hour and for negroes at 32·86, whereas the average in temperate climates is 39 with a maximum variation of ± 10 per cent. in normal persons.

This lowering of metabolism was thought to represent an adaptation to local conditions, and to constitute an advantage in the struggle against high temperatures, there being a diminution of the usual heat production which attends chemical cell activity. If de Almeida is right his findings are significant, but it would seem he is in error, for the Dutch hygienist Eijkman [44] has repeated in Java work he previously carried out, and has confirmed his former figures, which were in the neighbourhood of 40 calories per hour both for white and coloured persons. In favour of the Brazilian's view, however, Cohen,[45] of Philadelphia, has cited the pioneer work of Mayer on the blood, to which reference has already been made, and which indicated a lessened oxidation of tissues in tropical countries. Here again, then, we see discordant results and contradictory views, though it would seem that basal metabolism is not lessened and that the body temperature is regulated by the greater eliminative activity displayed.

With so many knotty questions to be solved it is perhaps surprising that, until recently, physiologists in temperate countries had done so little in the way of research into the climatological physiology of hot countries, employing experimental animals. Such inquiries, it is true, can only supply an indication of what may occur in the case of white settlers in the tropics, but they are likely to be useful and give a lead for the carrying out of anthropological investigations on the spot. It was a conception of this kind which induced Sundstroem [46] to apply himself to his studies on the adaptation of albino mice to an artificially produced tropical climate. It is unnecessary to describe his experiments in detail, but it may be said that the diet was carefully controlled. The record can be found in the *American Journal of Physiology* for 1922, and I am greatly indebted to Dr. A. G. Bagshawe for kindly directing my attention to it. Sundstroem set out in the first place to test the effect of the various factors composing a tropical climate on the growth and fertility of mice. He compared the growth of mice that had either been brought into a hot room at an early age—as a rule at 3 weeks—or were born in that environment, with the growth of mice kept continuously at ordinary room temperature. The rôle of light and of air circulation was also studied. The tropical room was kept at an average temperature of 89° F., the wet-bulb temperature being 82·2°. Unfortunately a kata-thermometer was not employed. Mazda globes formed the source of light both in the hot and the control rooms, and the radiation from these per se was found to produce physiological effects. About 1000 animals were used. They were bred to the fourth generation and the growth studies were continued to the twentieth week. I have tabulated the results, which, in Sundstroem's paper, are expressed in tables and curves.

1. Exposure to artificial light at ordinary room temperature accelerated the growth of mice, especially of those born in that environment.

2. A stagnant hot and humid atmosphere retarded the growth of mice which were transferred to their new environment immediately after separation from their mothers—i.e., when 3 weeks old.

3. Succeeding generations of mice born in the hot and humid environment behaved differently. The first generation may develop normally, the two following may show the greatest effect of the hot climate, at least so far as growth is concerned. The effect was evidenced by an abolition of the initial stage of comparatively rapid growth while the whole curve remained low, especially for females. The fourth generation was not observed beyond the seventh week, but it exhibited a considerable rise in the growth curve, which Sundstroem believes may signify a racial adaptation.

4. Exposure to artificial light in humid heat was found to enhance the retarding effect on growth. If, however, the hot and humid air was thrown into movement the unfavourable influence of the tropical environment on growth was partly neutralised.

5. The growth of male mice was less retarded by an unfavourable environment and more accelerated by climatic factors stimulating development than the growth of females. The author comments on the fact that women suffer more from heat in the tropics than do men. Hitherto, as I have indicated, this has been supposed to be due to their indoor life and avoidance of the sun, but possibly some other explanation must be sought.

6. When the fertility of a mouse colony was normal it was not necessarily lessened by confinement in humid heat for four generations.

Attention was also directed to the relation of the body form, and especially the surface area, to the reactions released by and the resistance to a tropical climate, and it was found that retardation of growth by increasing body-surface area may serve in a tropical climate to combat overheating of the body, and that mice may, through an enlargement of their ears and tails, further improve their cooling mechanisms. Here is definite evidence of bodily adaptation, and it is possible that it also occurs in man. The Australian is certainly evolving a lengthy spare type, not unlike the typical American who, let it be remembered, has to live through hot summers even in the Northern States; a type quite distinct from the classical form

of John Bull. Mice modified as above mentioned were found to have acquired a greater resistance towards heat.

Observations on the effect of the artificial tropical climate on the growth and pigmentation of hair and the dependence of these integumental functions on the temperature coefficient are recorded, but we need merely note the fact that the hair of recessive albino mice, when exposed to humid heat or to the radiation of strong light, acquired the power of producing pigment, and the suggestion that the optimum temperature for pigment production appears to fall within the range of tropical heat.

The author found no evidence that retardation of growth is due to an excessive amount of the thyroid hormone in the blood, but suggests that a tropical climate may, at least for mice, lessen the demand for thyroid hormone in the body. Here again we have the endocrine gland question cropping up, and it is clear that the whole problem of internal secretions as they may affect life in the tropics is worthy of attention.

Finally the effect of humid heat on the blood morphology of mice was studied and it was found that—

1. Progressive changes in the direction of an increase of the number of erythrocytes occurred in those mice which for the greatest part of their life or since birth had been confined in humid heat. It is suggested that this change is primarily due to inspissation of blood.
2. Progressive diminutions of the white count occurred in a number of generations of mice which were reared in humid heat. It is suggested that this change was produced by high sensitivity to an increase of temperature exhibited by organs concerned in new formation of white blood cells.

In view of Grober's [44] work on men in the desert one is inclined to ask if the red cell increase may not have been due to the stimulating effects of light. It would have been better, had it only been feasible, to employ sunlight instead of electric light, but it will, I think, be admitted that the results obtained are at least suggestive. They do not, however, aid us as regards the effects of climate on the nervous system, which appears to me to be the crux of the whole question. In this country the chief physiological work having a bearing on the subject under discussion is that carried out by Leonard Hill [45] and his collaborators on human subjects. It has, of course, had to be limited to the effects of humidity, heat, and light on the individual rather than the race, and has been largely concerned with questions of safeguarding health and securing comfort. There is much of interest to the tropical hygienist in Part II. of Prof. Hill's "Science of Ventilation and Open-Air Treatment," wherein reference is made to the work of Shaklie in acclimatising monkeys to the sun in the Philippines, such acclimatisation depending on an increased sensitivity in and efficiency of the sweating mechanism. One would fain linger over some of the physiological results, for they are at present the only beacon-lights which may guide us to the haven of certainty, but time is limited and before summing-up the evidence available and saying something about preventive measures and the future outlook it is advisable to consider briefly the pathological effects exerted by a tropical climate per se on the white sojourner.

PATHOLOGICAL EFFECTS.

So far as these are represented by nervous ailments it must be admitted that the boundary line between physiological and pathological effects is ill-defined. We do not know if demonstrable changes are induced in the nerve tissues. Little opportunity is afforded for observation upon this point in man, and only a skilled neurologist could decide the question. Insomnia, however, may be regarded as a pathological symptom. It is due to heat and excessive atmospheric humidity. Congestive disorders, affecting especially the liver and bowels and usually of a transitory nature, are probably caused by sudden changes of temperature. Concentration of urine may give rise to some renal irritation, especially in the newcomer, but there is no evidence that tropical climates damage the kidneys in any way. On the contrary, they are usually beneficial, lessening the strain on renal tissue. Tropical light may produce pathological effects on the skin, such as are seen in xeroderma pigmentosum and in cases of severe erythema, blistering, and œdema, but none of these conditions are of much significance, nor is the conjunctivitis which Finny [47] attributes to the light or actinic rays. Indeed, apart from heat exhaustion, heat-stroke, and the sudden coup de soleil, which will not here be considered, we must admit that the actual pathological effects of a hot climate are few and far between.

GENERAL CONSIDERATIONS.

It has been impossible for me in two lectures to go very deeply into a subject on which quite a formidable literature now exists, but I have endeavoured to give you some idea of the work which has been accomplished, the views at present held, and, it is to be feared, the complexity of the problem. I confess that one is tempted to echo the plaint of de Langen and Schut,[26] who stated that a study of the literature had revealed to them "a number of hypotheses in chaotic disorder, without proofs and without a leading idea being manifest in the various considerations." And yet I am inclined to consider them a trifle pessimistic, perhaps because their own and subsequent investigations have cleared the air a little. There can, I think, be no doubt that with due care, and provided the hygienist comes to the rescue in the way of providing a healthy environment, the individual white settler, man, woman, or child, can at the present time exist perfectly well under tropical conditions, and enjoy a fair measure of health for considerable periods at a stretch. It would seem, moreover, that a certain proportion of white men and a few white women can carry on active outdoor life in tropical heat year in and year out without much detriment to their physical and mental vigour.

Even in unhealthy surroundings it is remarkable what can be accomplished nowadays in the case of white children, as Bercovitz [48] demonstrated at Hainan in South China. This island is very hot, and there is a liability to abdominal chills owing to the sudden breezes which spring up. Moreover, the place is very unhealthy, malaria, hookworm, and dysentery being rife. Fresh cow's milk is not obtainable. It is said that a white child cannot play outside between 8 in the morning and 5 in the afternoon owing to the intense heat. Yet by the provision of roomy, well-ventilated houses, proper screening, and ceaseless skilled medical vigilance, with coöperation of the mothers, it has been possible during the last seven years to rear 16 children born to American missionaries. These children are described as healthy. Still, be it noted, there is one proviso—a yearly change to a cooler climate for both mother and children in order to restore vigour. There one has it—an exhausted nervous system, despite all the protection afforded. Again, is it not significant that the Annual Report of the Dutch Indies Medical Civil Service for 1920, published in 1922, states that out of 189 cases of disease on account of which leave was granted, no less than 111 were examples of psychoses or psycho-neuroses?

Hence, though I would like to keep an open mind, and though at one time I was inclined to think that the balance of evidence was on the side of Gorgas [49] and his school, I am not so sure, after a course of Huntington,[9] and, as a result of personal experience, that my mental pendulum is not swinging in the direction of Sir Havelock Charles and those who agree with him, and this even as regards the question of continuous prolonged residence in hot climates for the individual, at least in the low-lying tropics and under existing conditions.

So far as the race is concerned, I am persuaded that the hot and humid tropics are not suited to white colonisation and never will be, with our present knowledge, even if they are rendered as free from disease as England. As to the dry tropics and elevated

lands within the tropic zone, I would not like to hazard an opinion. Remember that it was not until the fourth generation that Sundstroem's mice showed possible signs of adaptation. Like Mr. Asquith and Dr. Steudel [1] we must wait and see, but I confess that I recall with foreboding what Havelock Charles [50] has said about the deterioration of various strains of domestic animals and even vegetables introduced from Europe to India. I only wish for once in a way I had the cheery optimism of the man who, having heard that ravens lived to be 200 years old, bought one to see if it was a true bill. In, say, 150 more years of life one might come to valuable conclusions regarding Kenya and North Queensland.

It is, however, more profitable to consider if anything can be done to favour acclimatisation, apart from dealing with insect-borne and other diseases, and beyond considerations like those involving suitable clothing, suitable habits of life, the use of fans, and so forth. By the way, we are inclined to think that we have discovered the true value of all these aids to comfort, but here is what the ingenious Dr. James Johnson [51] wrote in 1813, when comparing conditions in the West Indies with those in Bengal.

"With respect to officers, and other genteel classes of society, on landing in the Western world, they are destitute of many powerful shields which are pretty generally interposed between Europeans in the East and the burning climate. In the former case, we may look in vain for the palankeen, the budgerow, the punka, the tatty, and the light, elegant, and cool vestments of India, together with the numerous retinue of domestics, anticipating every wish, and performing every office that may save the exertion of their employers. The untravelled cynic may designate these luxuries by the contemptuous epithet of 'Asiatic effeminacy'; but the medical philosopher will be disposed to regard them as rational enjoyments, or rather as salutary precautions, rendered necessary by the great difference between a temperate and torrid zone."

His whole chapter on personal tropical hygiene is well worth reading. But to hark back to hygienic measures on the big scale: The provision of good and palatable food in abundance and presenting sufficient variety is of primary importance and will in part form the theme of my next lecture. I have been wondering if the comparatively excellent dietary available in Mauritius has something to do with the retention of vigour by its white inhabitants. Housing and town planning on scientific lines must receive attention. Guiteras [52] suggests that one reason why the Spaniard has fared better in the tropics than other Europeans is because he knows how to house himself. Certainly he contrives to keep his house cool and dark, but unless he possesses a fan or punkah he lives in a stagnant atmosphere, as he closes his windows and has no other means of ventilation. I am inclined to think that the methods advocated by Crossland [53] are better, at any rate in places where a breeze is obtainable. His experience was chiefly gained on the stifling Red Sea littoral, and he has recommended the provision of sliding louvred shutters inside the glass frames of the windows and sliding doors louvred at the bottom so that, the slats being set at an angle of 45°, the wind is deflected upwards by them and reaches the face and body of anyone seated in the room, thus making for coolness. I note that Hewetson [54] is strongly opposed to the one-storied bungalow, and I agree with him that, wherever possible, it is advisable to get away from the ground. The best tropical house in which I have ever lived was that once occupied by the German medical officer of health at Dar-es-Salaam, and it possessed two stories.

It is, however, scarcely necessary to consider details. We know how to build cool houses suitable for the tropics, though very often we fail to do so, partly because they cost money. Even so, with careful orientation, choice of material, and good design, the best house is only relatively cool. But while the architect has gone as far as he is likely to get, the engineer is far from being at the end of his resources. Air conditioning, as it is called, developed chiefly in America, is a process of so-called "weather manufacture" which is bound to progress. Hitherto it has been chiefly applied to industrial buildings, but it has been used in connexion with laboratories and hospitals in the United States. It is not only a question of cooling air but of dehumidifying it. Indeed, so long as the atmosphere to be treated is under control—that is to say, in a confined space—it can be altered to suit requirements. Of course, such a system requires a large plant, and is costly. In the tropics it could only be applied generally in towns and cities, but there seems no reason why in the future such a system should not be adopted. One would not aim at uniformity of temperature even indoors, for what is required is change within reasonable limits, but surely this is not beyond the genius of the engineer to compass! We may look forward to the day when there will be a central station which will provide cool, dry air to European dwellings, the latter being provided with regulators so that whatever temperature and humidity is desired can be obtained. Chill must, of course, be avoided. For isolated houses, the compressed-air douche advocated by Prof. Hill [55] may yet be feasible. It would mark a great step in advance. Moreover, as transport conditions improve there will be large and periodical movements of people from hot, low-lying regions to cool uplands which are attainable in many parts of the tropics. The change from the plains to the hills means much in India, and a similar change should yet be possible in many other places, not only for the wealthy but for all classes of the white sojourners in hot countries. People have yet to learn that prevention is better than cure, and what huge sums can be saved in hospital upkeep and devoted to better and saner purposes. Time lost through illness and inefficiency means money wated, and there has yet been little organisation of public health on a communal basis in the tropics.

Can we alter climate as well as defeat it in some measure? Who can say? We are only beginning to realise what electricity can accomplish, and, as I have hinted, it is conceivable that by its powers we may be able to bring about much-needed and welcome local reductions in temperature. Stranger things have happened, though at present it may seem a vain dream. As Hintze [56] says, there is a great future for mechanical means in the tropics. The white settler should drive machines rather than do work with his own muscles. If so, however, he must not neglect the necessary daily exercise. Much can be accomplished by more careful selection of those destined for the tropics, by choosing suitable sites for first settlement, by regulations as regards the time of marciage, by general forethought and foresight. At present we are haphazard in our arrangements and suffer accordingly.

Above all, there is the need of stimulus—not necessarily climatic in nature. Almost any stimulus is good provided it is not alcoholic. There is the necessity for work, contact with other races, idealism as to the future, and so forth. There is a hygiene of the mind as well as of the body, and methodical and systematic intellectual exercises will do much to prevent mental staleness and brain stagnation. It is interesting to speculate as to what the influence of broadcasting will be in this direction. It should diminish the sense of isolation, it should lend interest to life, it should quicken and revivify the cerebral centres.

If all these measures fail to render the white race more than sojourners then there is nothing for it but the half-breed, an adaptation not perhaps to be desired, but which has undoubtedly done much for tropical South America and which is possibly Nature's way of overcoming the difficulty. Yet in many directions Science has conquered Nature, so why should it fail in this particular, complex though the problem be? I began with Huntington.* Let me end with him, for he ends on a high and hopeful note. "Hitherto," he says, "we have attributed our failure to economic conditions, to isolation and remoteness, to racial incapacity, or to specific diseases. Now

we see that it is probably due in part to lack of energy or to other unfavourable effects produced directly upon the human system by climate. There is no reason for despair. We ought rather to rejoice because, perhaps, we may correct some of the evils which hitherto have baffled us." And again: "The climate of many countries seems to be one of the great reasons why idleness, dishonesty, immorality, stupidity, and weakness of will prevail. If we can conquer climate the whole world will become stronger and nobler."

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MEDICINE AND THE LAW.

COCAINE TRAFFIC AND LONG SENTENCES.

THE record of Edgar Manning, 37 years of age, sentenced to three years' penal servitude recently at the Old Bailey for having in his possession cocaine and opium smoking instruments is instructive. It shows the type of experienced criminal with whom the police have to deal, and the lure exercised by the cocaine trade with its high profits, combined with the difficulty of detecting offenders. Manning, it was stated, came to this country from Jamaica. In 1920 he received a sentence of 16 months' imprisonment for shooting at and injuring other men in a restaurant, and at that time was trafficking in drugs and living on the immoral earnings of a woman. In 1922 a man died in Manning's flat from an overdose of heroin, believed, no doubt rightly, to have been obtained from him. In 1922 he was sentenced to six months' imprisonment for the possession of opium and cocaine after being arrested in the house of a Greek woman also carrying on business in cocaine. A woman had died in 1922 from taking drugs believed to have been obtained from him. The police stated at the Old Bailey that Manning used the drug himself, while supplying it to others. It is difficult to see what can be done with a man of this class beyond keeping him out of mischief in prison.

A BEDRID CRIMINAL.

At Lewes Assizes Mr. Justice Avory sentenced to six months' imprisonment in the second division George Tebbutt, aged 53, who was carried into court on a stretcher and laid on a table in front of the judge. Mr. Justice Avory had already resisted all appeals made on the ground that the man was in such a state of health that to bring him up for trial would be fatal, and the magistrates who committed him had taken the evidence in his bedroom at his house. Tebbutt was sentenced protesting that his period of imprisonment would kill him, and there is no doubt that to laymen, at all events, his appearance was that of a man at the point of death. Nevertheless, it has been reported that when carried out of court he was able to raise himself and to bid a smiling farewell to his friends, and his case, which is certainly of an unusual character, should be of some interest to the prison medical authorities. His offence was the systematic obtaining of goods on credit without disclosing that he was an undischarged bankrupt, and the notepaper on which he wrote elaborate letters ordering the goods bore the motto "Audaces fortuna juvat"!

LIBEL ON A MEDICAL REFEREE.

At the recent assizes at Durham, before Mr. Justice Greer and a special jury, Dr. S. W. Plummer recovered £100 damages and costs in an action for libel against five officials of a miners' lodge, contained in a pamphlet circulated by them among the lodges of the Durham Miners' Association. The printers of the pamphlet were also defendants and apologised, pleading ignorance of its contents. The pamphlet was directed against Dr. Plummer in the performance of his duties as medical referee with regard, in particular, to a report made upon a young miner whose wrist had been injured in an accident. Dr. Plummer had reported inter alia that the lad had a permanent disability and "is unable to make full use of his left hand and his condition is such that he is fit for employment as a pony putter, but he could not do heavier work which involved the full use of his left hand." According to the defendants' contention pony putting was the heaviest work in the mine, and the pamphlet, after accusing the plaintiff of lack of practical experience and of making a "ridiculous" report, concluded "we respectfully ask your members to help us to turn this man off the medical referees' list." These concluding words were held by the judge to be for the jury's consideration as evidence of malice, and he therefore allowed the case to go to the jury, after having ruled that the occasion of the publishing of the pamphlet was privileged. Dr. Plummer is to be congratulated, and it seems hardly necessary to add that it is a grave hardship upon medical referees that attacks of the kind described should be made upon them by parties displeased with their reports, whether such parties be workmen or their employers.

INTERPRETATION OF SKIAGRAMS.

In an action for damages for negligence a plaintiff at Birmingham Assizes, who had been injured by a motor-van, was stated to have suffered from a fractured skull. Photographic prints were adduced as evidence in support of this when a question arose as to what these revealed. A medical man, called on behalf of the plaintiff, gave evidence that they showed a fracture of the skull. Another medical man, a radiographer, was of the opinion that no fracture was proved by the illustrations, and that the lines pointed to as indicating fracture were blood-vessels. He also spoke of the difficulty at times of drawing correct deductions from such photographs. The jury eventually awarded the plaintiff £350 damages, so presumably they preferred to rely on the evidence of more serious injury, but, of course, the views of a jury are not conclusive as to scientific evidence. The point is interesting as showing that photographs that are at all obscure should, if possible, be supplemented by fresh negatives.

RESEARCH ON PARASITES OF THE COTTON PLANT.—The Empire Cotton-growing Corporation has offered to the University of Manchester and three other institutions for a period of five years a grant to promote study of and research in mycology and entomology, with particular relation to diseases caused by animals and plant parasites of cotton. The Council of the University has accepted the offer and has appointed Mr. Samuel Wilkins, M.Sc., to supervise the department of plant diseases, and Mr. R. A. Wardle, M.Sc., to supervise investigations in entomology.

TUBERCULOSIS.

Annual Report of King Edward VII. Sanatorium, Midhurst.

On the cover of this report, which deals with the period July, 1921–July, 1922, it is stated that the charge per week has been reduced as from April 1st, 1923, to 4 guineas. This is most satisfactory and greatly to the credit of the persons concerned. Some instructive figures are published with regard to sputum tests. Of the 363 patients whose sputum was examined, 271, or 75 per cent., proved to be sputum-positive, and a comparison of the naked-eye appearance of the sputum with the microscopic findings showed that when typical, purulent sputum was examined, tubercle bacilli were demonstrable in 93·5 per cent., whereas they were found in only 17 per cent. of the watery, poor samples of sputum. Among the 271 sputum-positive cases there were 227 in which tubercle bacilli were found at the first examination, 26 on the second examination, eight on the third, and ten on subsequent examinations up to the twelfth. The interesting calculation is made that if, in a suspicious case of tuberculosis, three examinations of the sputum for tubercle bacilli yield negative results, there still remains roughly a 1–27 chance that the bacilli may be discovered on subsequent examinations during the following three months. Some of the most modern methods for treating tuberculosis in a sanatorium do not seem to be in favour at Midhurst, and the table of cases treated by artificial pneumothorax in the period under review deals with only four cases. Apparently one of the contra-indications to this treatment at Midhurst is the prospect that the patient may be unable to have "re-fills" after leaving the sanatorium.

Annual Report of Vejlefjord Sanatorium, Denmark.

The twenty-third report of Vejlefjord Sanatorium covers the period Jan. 1st–Dec. 31st, 1922, and opens with a brief obituary notice of Prof. Saugman, the creator and presiding genius of the sanatorium. Of the 145 patients discharged from the sanatorium during 1922, 129 were suitable for statistical investigations. About 56 per cent. were in the third stage, and 31·9 per cent. were confined to bed. The average duration of treatment was 208 days, and 48, or 37 per cent., of the patients were febrile on admission. Of these 48 patients, 39, or 81 per cent., became afebrile after an average interval of 50 days. Of 23 patients whose maximum rectal temperature was between 37·8° and 38° C., 21 became afebrile after an average interval of 34 days, whereas of 20 patients, whose maximum rectal temperature was between 38·1° and 39° C., 14 became afebrile after an average interval of 64 to 65 days. Some explanation for these remarkable results may be found in the section of the report dealing with the various methods of treatment adopted at Vejlefjord. Of the patients discharged in 1922, 40 were selected for pneumothorax treatment, which in 17 cases had to be abandoned on account of pleural adhesions. Fourteen underwent thoracoplasty, and one apicolysis with fat transplantation. Fifteen were treated with quartz-mercury light, and 31 with carbon arc light. X ray treatment of the spleen was undertaken in five cases, and local, Finsen-Reyn light treatment or Bacmeister's combined X ray and quartz-mercury-light treatment was given occasionally. Heliotherapy was given only in three cases, and these were, presumably, cases in which the disease was mainly surgical tuberculosis. An item of news which does not appear in this report is that Dr. Gravesen, a former assistant of Prof. Saugman's, on whom his mantle has fallen, was reading a paper on the surgical treatment of pulmonary tuberculosis on July 25th at the annual meeting of the British Medical Association.

The Grancher System of Infant Prophylaxis: Five Hypotheses Relating to Tuberculosis in Infancy.

A paper by Léon Bernard and Robert Debré in *Annales de Médecine* for May, 1923, gives an instructive account of the elaborate organisation established in Paris for isolating infants at birth from tuberculous surroundings. The expectant tuberculous mother is confined in some maternity hospital with which the central tuberculosis organisation coöperates. The mother is instructed beforehand as to the facts of the situation, and her consent is obtained for the removal of her infant directly after birth. Even when only the father is tuberculous, it is usually desirable to remove the infant at once to uninfected surroundings unless the father leaves the home to enter an institution for the tuberculous. If he does not, and the healthy mother attempts to combine wage-earning and the care of her infant, the odds are that it will suffer.

Prof. Bernard and his collaborator enunciate five hypotheses—laws, they prefer to call them—dealing with the pathology of infection with tuberculosis in infancy. The first three are fairly well established, the two last are at any rate very interesting and suggestive. (1) The fate of the infant depends on its age at the time of infection. Of five infants, less than 15 days old when removed from exposure to infection, all died, whereas of 41 between the age of 6 and 18 months at the time of removal, only 10 died. (2) The next most important factor is the duration of exposure to infection. The authors compare the duration of such exposure among 33 infants who escaped contamination with the duration of exposure of 86 infants who were found to be contaminated, and the figures published show that, as a rule, the longer the exposure, the higher the rate of tuberculosis among infants. (3) Intimacy of contact also plays a part, and the authors refer to statistics published elsewhere in support of this hypothesis. (4) There is a definite relation between the gravity of the disease in infancy and the duration of the "ante-allergic" period—the incubation period or interval between the moment when exposure to infection ceases and the cuti-reaction becomes positive. The shorter this period, the more serious is the disease. (5) There are exceptions to this fifth law, but they are not common enough to invalidate it. It concerns the duration of life of the infant after exposure to infection has ceased. The authors have never observed an infant who lived for six months after exposure to infection ceased and then died of the disease. Of 36 infants dying of tuberculosis, 30 died within a month of isolation from infection by a mother or father, one died two months after isolation, one four months after, and one five months after. In other words, an infant who is still alive a month after removal from an infectious parent has excellent chances of survival.

UNITED STATES OF AMERICA.

(FROM AN OCCASIONAL CORRESPONDENT.)

Industrial Hazards of Children.

A RECENT report by the Bureau of Women in Industry drew attention to the frequency of accidents to children who are employed in defiance of the law. Thus in a single year 44 children were found to have suffered injuries, involving at least a fortnight of invalidity, none of them being of the legal age in their respective employments. One boy of 11 had his hand crushed while operating an electric ice-cream freezer; another boy, only a year older, lost two fingers in feeding meat into an electric chopper. A Bill designed to prevent this illegal employment of children has been introduced into the New York State legislature. If passed it will provide double accident compensation and double death benefits for all children illegally employed.

Since July 9th a large force of New Jersey State inspectors have been investigating the conditions under which home industries are carried on. It appears that the distribution of work by New York manufacturers has been growing to very considerable proportions.

Not only is the matter of child labour involved here—and many quite young children are found to be working—but the sanitary conditions of these home factories are sometimes found to be very deficient. Mr. Charles A. Weeks, Deputy Commissioner of Labour for New Jersey, states in an interview that his attention has been called to several pathetic cases where parents living in Jersey City and Hoboken have been working long hours in dingy, ill-lighted, and unsanitary rooms, and that in some instances children hardly old enough to handle the work have been pressed into service. Legislation in this case is unnecessary since the New Jersey State law provides a penalty of $50 for the unauthorised use of private rooms for homework of any industrial nature. The law further provides that rooms so used shall have no door, window, or other opening into adjoining living rooms, and that these rooms shall not be used at any time for living, cooking, or sleeping purposes.

Medicine in Industry.

The annual meeting of New York health officers was held during the last week of June at Saratoga Springs. A thoughtful address on the principles of health supervision in industry was given by Dr. Bernard L. Wyatt, director of the Laurentide Health Service, Quebec. The use of the word welfare in connexion with industrial health service is, he holds, greatly to be deprecated. Such service must not be a form of philanthropy or paternalism. Nor must it be regarded as a substitute for some other essential factor in industrial relations. The worker expects (*a*) a steady job, (*b*) adequate real wages, (*c*) a good foreman, (*d*) a voice, individual and collective, in settling his own conditions, (*e*) a chance to rise. Industrial health work must supplement and not replace any of these factors. It should be undertaken not as strike insurance, but in a spirit of service; those who are engaged in it must remember that the interests both of employer and employee must be safeguarded. The coöperation of both is needed; experience has shown, for example, that accidents cannot be prevented by rules, discipline, or appliances without the willing and earnest coöperation of the workers themselves. As regards financial outlay, it is more important to start right than to start on a large scale. In the case of one firm an extensive programme of health supervision was organised in the brief period of eight months, and for the next three years the executives were kept busy explaining why they had not put the money into the pay envelopes of the workers instead of spending it as they did. The work must be built upon the expanding consciousness of its merits in the minds of those it serves. The old conception of a "plant doctor" employed to dispense a few pills and to dress minor injuries is giving way to a conception of industrial medicine as a preventive rather than a curative branch of the art. There are at least 700,000 accidents yearly in the United States, of which not less than 78 per cent. are preventable. Again, the recognition of the inseparability of good health and efficiency may be expected to result in development of the preventive side. It is clearly short-sighted to limit one's efforts to the eight or the ten working hours; experience has shown the definite advantage of some concern for the home and community conditions of the workers.

In estimating the financial return of a health service two principles were emphasised. In the first place all results are not tangible; in the second place, while certain maintenance charges in connexion with health supervision are chargeable as production and should be passed on to the consumer, others should be offset by savings in materials, labour turnover, absenteeism, continuity of production, and the like. The maximum of benefits will not be attained within three or four years.

BURNLEY AND THE VACCINATION ACTS.—The Burnley guardians have, it is stated, decided to take no notice of the communication of the Minister of Health concerning the administration of the Vaccination Acts.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENT.)

Working of District Municipalities in Madras Presidency.

THE Government review on the working of the district municipalities in the Presidency for the year 1921–22, which has just been issued, contains, inter alia, the following information relating to medical affairs and public health activities:—

Medical Relief.—During the year new municipal dispensaries were opened at Vellore, Pollachi, and Calicut, and the hospital at Tirupati was converted into a dispensary. Two dispensaries at Udamalpet and Proddatur were closed. The councils maintained 54 hospitals and 44 dispensaries. The councils of Anantapur, Chingleput, Chittoor, Cuddapah, Mangalore, and Kurnool have no medical institutions, the towns being entirely dependent for medical relief on the district headquarters hospitals maintained by the Government or on private enterprise. The only municipalities which have no hospitals of any kind are Walajapet, Saidapet, Tirupati, Palakole, and Sivakasi. There were health officers throughout the year in the municipalities of Coimbatore, Calicut, Ootacamund, Tuticorin, and Trichinopoly.

Birth-rate.—The problem of improvement of the registration of vital statistics has engaged the attention of the Government for many years past. The defects of the present records were subjected to an exhaustive examination by the Director of Public Health, and the memorandum drawn up by him summarising the lines on which accuracy may be improved has since been circulated to all officers concerned. The births recorded by municipalities work out at an average of 30·3 per mille. Tiruvannamalai tops the list with a rate of 46·6.

Maternity Relief.—The councils employed 134 midwives, against 110 in 1920–21, as now reported, and the number of cases treated by them arose from 11,745 to 12,553, an average of 93 per midwife. In addition, 135 midwives were practising privately and attended 6080 cases. In all about 25 per cent. of births were attended to by qualified midwives. There are no midwives at all in Cuddapah and Salem, and in most councils this service does not receive proper attention, the staff employed being utterly inadequate. On the other hand, Mangalore has 21 trained midwives, nine of whom are employed by the municipality, who between them attended 75 per cent. of the recorded births; Trichinopoly employs six midwives, in addition to 20 other qualified midwives in the town, and the number of confinements which received skilled attention rose by about 65 per cent. For these good results the councils are indebted chiefly to the District Health and Welfare Association at work in these places.

Death-rate.—Public health was worse than in the previous year, the rate reported being 27·2 per mille, against 21·8. Gudiyattam and Bezwada head the list with 47 and 41 per mille respectively. The mortality figures for epidemic diseases are as follows: Cholera, 1861; small-pox, 1687; plague, 2151. As regards cholera, the towns with a protected water-supply did well. Apart from Cocanada, which had 117 deaths in a part of the town where piped water was not accessible, eight only showed a mortality of more than 20. There were in all 634 deaths from cholera in the 28 protected towns, and 1227 deaths in the remaining 52, the rates per mille being, protected 0·2, and unprotected 0·5. As anticipated, the small-pox epidemic assumed a severe form, being highest in Madura (466 deaths). Vaccination only slightly improved, the number of successful primary operations rising from 80,124 to 81,161, and the number per mille of the population from 32·0 to 32·4. Revaccinations increased from 26,797 to 28,360. Plague was less virulent than in 1920–21, the death-roll falling from 4914 to 2151. Influenza was responsible for 372 deaths, against 481 in the previous year.

Sanitation.—The conservancy charges rose by Rs.1·05 lakhs over that of 1920–21, the average expenditure being nearly As.9–10 per head. Private scavenging was self-supporting in 16 municipalities. The number of private latrines increased by 18,699, and the number of houses conserved by 17,685. These figures are disappointing.

Water-supply.—Twenty-eight towns in the Presidency possess a protected water-supply; in three towns new installations are under construction, and schemes have been sanctioned for four others. The present financial position makes it impossible to expect great and rapid progress in this matter.

The average consumption of water ranges from 51 gallons per head in Tirupati (no other town consumes more than 15 gallons per head per diem) to nearly 4 gallons per head in Berhampur and Guntur. Financially, the water-supply fund for all the 29 towns taken together shows a plus balance of Rs.0·80 lakh.

Drainage.—Only one town has a completed drainage system, and in two, Madura and Vellore, drainage-works are still under construction. Schemes are under discussion in no less than 25 towns, but want of funds is generally holding these up.

Government, in concluding their review, state that municipal councils evidently do not realise that in the depressed state of their finances they cannot afford to be tardy in the collection of their tax revenue or indifferent in remission or writing off of bad debts. Many irregularities have been brought to notice by the local fund auditors.

Relapsing Fever in Madras Presidency.

The Madras Presidency has until recently been, as far as is known, entirely free from relapsing fever, but towards the end of 1921 reports of cases began to be sent in to the Public Health Department, and eventually, on investigation, it was found that infection was widespread in certain districts. The first report on the subject was sent by the Director of Public Health to Government on Nov. 17th, 1922, and the Government have recently published the report along with their remarks. The Government review sums up the situation as follows: In February, 1922, the Presidency was regarded by research specialists as immune from relapsing fever, but in the following month reports were received of the occurrence of a new and deadly epidemic in the district of Tanjore. Relapsing fever had been widely prevalent in the Mysore State for some time past, and an outbreak occurred in the adjoining plateau taluk of Hosur in Salem district in October, 1921, but its scope was limited. The Tanjore outbreak, the origin of which it is impossible to trace, stands on a different footing. An elaborate investigation by the Public Health Department revealed the fact that this disease had established itself in the districts of Tanjore and Trichinopoly for seven months before it was detected by the authorities locally responsible for public health administration. The disease was restricted almost exclusively to the Paraiyar and Pallar communities; neither the local village officers, nor the landlords in whose service the Paraiyars and Pallars are employed, bestirred themselves to combat it, but the victims realised the character of the epidemic sufficiently clearly to describe it as "Paraiyars' fever," attributing it to the pollution of a sacred tank in Kumbakonam by a Paraiyar, and realising that its virulence could be abated by the simple expedient of shaving the head.

The Director's report establishes the following three points of supreme importance in public health administration:—

(*a*) Closer vigilance over vital statistics would have enabled the Public Health Department to take steps to stamp out the disease at its outset. The Director's diagrams show very clearly the existence in these villages of an abnormal prevalence of "fevers" in August and September, 1921, rising to a maximum incidence in the period December, 1921, to March, 1922. The report proves by corroborative evidence that this rise in mortality was due to relapsing fever, and that the worst was over before the disease was correctly diagnosed. The statistics also reveal the facts: (1) that adults of from 20 to 40 years of age are most susceptible to infection, while its incidence among very young and very old is comparatively light; (2) that women are somewhat more susceptible to infection than men.

(*b*) The impossibility of tracking down an epidemic of this kind unless the local health authority is equipped with a properly trained preventive staff. Only by intensive local investigation can the public health authorities locate the districts infected and take steps to eradicate the disease. The essential fact was that infection was confined to certain specified villages and to certain communities. The need for the appointment in every district of district health officers with a properly trained staff is amply justified, and when the complete scheme sanctioned comes into operation, it is inconceivable that so large an epidemic as that now under review can again run its course without detection.

(*c*) The third point is the importance of accurate knowledge. The actual diagnosis of the cause of the trouble was made in the first instance by the examination of blood smears, at first in the Tanjore Medical School, but the work of a mobile unit of the King Institute staff organised to examine the disease in situ met with a success impossible in the absence of such a unit. It is satisfactory that in the reorganisation of the King Institute provision has been made for field units as a permanent accessory to the Guindy staff.

The Director estimates that out of 9060 attacks for which relapsing fever was accountable, no less than 3382 ended fatally. This gives a mortality rate of 37·3 per cent., but in some villages two died out of every three persons attacked, while in a considerable number of villages infected from 70 to 80 per cent. of the population suffered from the disease. In many households the whole family was wiped out. That the spread of infection is due to overcrowding and dirty habits was shown by the almost complete immunity of the higher castes living in close proximity to infected hamlets.

Since the submission of this report the disease has spread to other districts, and will probably gradually extend its ravages all over the Presidency. Preventive measures, while simple, are by no means easy to carry out in a population of 42 millions, although it has been possible in small areas to get considerable numbers of both males and females to shave their heads. The treatment of thousands of individuals living in remote villages in the mufussal with drugs like salvarsan is, of course, out of the question. The position is very serious.

Health Propaganda and Voluntary Associations.

The Government have just published an Order which contains the following paragraphs:—

"The better organisation of public health propaganda and the coördination throughout the Presidency of the work of voluntary health associations have engaged the attention of the Government for some time past. In a previous Order a programme was laid down for the coördination of health work through the medium of district health committees, and with effect from April 1st, 1923, each district will have a health officer. Practical experience has also been gained of the possibilities of propaganda work in the mufussal by the deputation of four assistant surgeons early in 1922 on lecturing tours in a number of districts. The Director of Public Health's report attached as an annexure to this Order is a most convincing testimony to the value of such work."

"On the non-official side the cause of public health has been greatly strengthened by the reconstitution of the Health and Welfare Association and the distribution of its functions between two separate organisations: (1) the Health Propaganda Board, and (2) the Maternity and Child Welfare Association, Madras, which is affiliated to the Lady Chelmsford All-India League. This association had, even before the reconstruction of the Health and Welfare Association, greatly expanded its activities both in the mufussal and also in Madras City, working in the latter area in close coöperation with the health centres of the Madras Corporation. The corporation health centres have now received definite recognition as a Health Visitors' Training School for the Presidency. A wide field has also been covered by the hookworm propaganda work of the Rockefeller Foundation."

"The Government have now before them two documents which they hope will give cohesion and permanence to activities which hitherto have been somewhat discontinuous. The first is a 'Memorandum on Propaganda and Voluntary Health Work,' drawn up by the Director of Public Health, while the second document is a 'Memorandum on the Future Policy of the Health Propaganda Board.'"

The Director in his memorandum discusses the great need for propaganda work in the present state of ignorance and apathy of the people, and lays down a definite plan of campaign, at the same time outlining the official and non-official agencies already in existence. The third section of the memorandum describes the activities of the Public Health Department in connexion with the giving of popular health lectures. These lectures were given by qualified assistant surgeons and are reported to have been most successful. It is regretted that the small grant for this piece of propaganda work was cut out of the current year's budget. The fourth part of the

memorandum mentions the bodies of voluntary workers, &c., at work in Madras city and in the mufussal, and discusses the various ways in which these bodies may be utilised by a central propaganda organisation. Finally, a detailed programme of work is suggested, this programme including campaigns for prevention of hookworm, plague, small-pox, cholera, malaria, tuberculosis, venereal diseases, for child welfare and maternity relief work, &c. The Health Propaganda Board is felt to be the body best suited to form the necessary link between the State and local bodies on the one hand, and on the other the various voluntary associations and societies. It is suggested that representatives of the various official and non-official agencies should be elected to this Board, so that a more or less complete coördination could be obtained. On the official side the Director of Public Health, representing the Public Health Department, the Director of Public Instruction, representing the Educational Department, and the Director of the King Institute, representing the Medical Department, should be coöpted members of the Board.

The memorandum on the future policy of the Health Propaganda Board, written by Major J. Cunningham, I.M.S., is also printed with the Government Order. This memorandum discusses a scheme for the organisation of public health propaganda from the non-official point of view, and while laying down certain general principles in connexion with health propaganda which require consideration before the actual organisation of the central body can be discussed, it reaches conclusions which are not at variance with those promulgated by the Director of Public Health. It is suggested that the Health Propaganda Board could best carry out its functions as the central organisation for health propaganda by means of two subcommittees which, for want of better names, could be known as (1) the technical, and (2) the administrative. These two committees would in no sense be water-tight compartments, but would work in the closest coördination with each other.

The Government do not discuss these two memoranda in detail, but suggest that they deserve careful study. The Government admit the necessity for a central agency to coördinate the efforts of the numerous bodies interested in public health propaganda, but defer the question of financial assistance, as they understand the formation of such an agency is under consideration. The recent visit of Sir Claude Hill, the Red Cross Commissioner for the League of Nations, has stimulated interest in the international activities of the Red Cross Society in public health propaganda.

CONGRESS OF THE ROYAL SANITARY INSTITUTE AT HULL.

THE Thirty-fourth Congress of the Institute, which opened at the beginning of the week, bids fair to be exceptionally successful, attended as it is by over 500 delegates from this country and a large number of overseas representatives. On Sunday, July 29th, Canon George Buchanan preached a striking sermon to the members of the Congress, in which he developed the theme that health and wholeness implied the same thing, and to secure real health every section of the community and every phase of social life must be reached.

On July 30th the Lord Mayor of Hull received the members and delegates and later on opened the Health Exhibition in the Wenlock Barracks, a building admirably adapted for the purpose. At 5 P.M. the Right Hon. T. R. Ferens, High Steward of Hull, President of the Congress, delivered the inaugural address, Dr. Louis C. Parkes, Chairman of the Council of the Institute, being in the chair. Mr. Ferens made special reference to housing as the greatest need of the nation to-day. Hull needed approximately 6000 more houses. It was no use, he said, attempting to instil the precept of hygiene into people who live in the many dilapidated and insanitary dwellings which to-day exist in the slum areas of all our towns and cities. As a contrast, Mr. Ferens invited the members to visit the well laid out garden village in East Hull, covering an area of 60 acres and containing 600 houses; marked improvement in health was the result of life there. Mr. Ferens also alluded to the social and hygienic work in connexion with a factory in East Hull, where over 5000 workers of both sexes are employed. Here, during the past 15 years, a whole-time doctor and a whole-time dentist have been engaged, and may be consulted at any time. Nurses are provided, and are in charge of dressing and rest rooms for casualties and slight illnesses. There are health visitors who become acquainted with home conditions of the workers. Boys and girls under 18 are taken from their work two hours weekly for drill and gymnasium at the company's cost. Dental work has proved most beneficial in the maintenance of general health; tooth-brushes and tooth-powder are bought wholesale and supplied at cost price. Applicants for employment are examined by the doctor as to their suitability for factory work. The medical examination is on very broad lines and rejections are few, consisting of those suffering from epilepsy, oral sepsis, tuberculosis, and certain heart cases.

At the conclusion of his address a vote of thanks to Mr. Ferens was proposed by Lieut.-Commander J. M. Kenworthy, M.P., and seconded by Surgeon W. W. King, of the United States Public Health Service, on behalf of the delegates from Foreign Governments. The motion was also supported by Dr. J. E. Sandilands, Executive Health Officer of Bombay, on behalf of the delegates from the Dominions, by Dr. S. J. Thacker, ex-Mayor of Christchurch, New Zealand, and by Judge W. J. Harvey, of Edinburgh, on behalf of the delegates from Municipal Authorities, and was put to the meeting by Mr. H. D. Searles-Wood, chairman of the Institute's Congress Committee.

The meetings of conferences and sections are proceeding as outlined in THE LANCET of July 21st (p. 152). Elsewhere in the present issue appears the text of Prof. F. E. Wynne's address, delivered before the Section of Maternity and Child Welfare on August 2nd. A large number of firms are displaying apparatus, materials, and preparations of interest to all concerned in hygiene and sanitation.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg.-Lt. H. A. L. Guthrie to be Surg. Lt.-Comdr.

ROYAL NAVAL VOLUNTEER RESERVE.

Temp. Surg.-Lt. W. F. W. Betenson, late R.N., to be Surg.-Lt. (Permanent List).

Surg.-Capt. R. J. E. Hanson is placed on Retd. List at his own request.

TERRITORIAL ARMY.

Capt. A. W. Wakefield (late Canadian A.M.C.) to be Capt.

A. H. MacCulloch Eaton (late R.N.V.R.) to be Lt.

Capt. F. E. Tylecote relinquishes his commn. and is granted the rank of Maj.; and Capt. J. Macquarrie resigns his commn. and retains the rank of Capt.

Sanitary Companies: Capt. R. Cunningham (late R.A.M.C., Mila). to be Capt.

INDIAN MEDICAL SERVICE.

Col. Charles Harford Bowle-Evans, V.H.S., C.M.G., C.B.E., has been appointed Director of Medical Services in place of Lieut.-Gen. Sir C. H. Burtchaell, C.H., K.C.B., C.M.G. This is the first time that an officer of the I.M.S. has been appointed to be Director of Medical Services, and we congratulate all concerned on the departure.

The King has approved the retirement of Maj.-Gen. Sir William Rice Edwards, K.C.I.E., C.B., C.M.G., K.H.P.

THE Lancashire Asylums Board has decided to apply under a Bill now before Parliament for the name to be changed to "Lancashire Mental Hospitals Board."

ELEVENTH INTERNATIONAL PHYSIOLOGICAL CONGRESS.

THE Eleventh International Physiological Congress met in Edinburgh from July 23rd to 27th, under the presidency of Sir EDWARD SHARPEY SCHAFER. We referred in the last issue of THE LANCET to the opening of the Congress,[1] at which were present members representing over 20 nationalities. The proceedings included a graduation ceremony, at which the honorary degree of Doctor of Laws of the University of Edinburgh was conferred on the following distinguished members of the Congress: Profs. F. Bottazzi (Naples), W. Einthoven (Leiden), W. H. Howell (Baltimore), J. E. Johansson (Stockholm), A. Kossel (Heidelberg), H. H. Meyer (Vienna), Ivan Pavlov (Petrograd), and C. Richet (Paris).

At the opening session, following the official addresses of welcome on behalf of the Government, the city and University of Edinburgh, and the President's address, Prof. J. J. R. MACLEOD, of Toronto, delivered a lecture on insulin, which we published in an abridged form in our last issue.[2] A large number of other papers were devoted to various aspects of this subject. The programme was so varied and extensive that thoughout the meeting communications had to be delivered in three lecture theatres concurrently. Physiology has now become so highly specialised that many of the subjects dealt with appealed only to a small group of experts; but there were also a large number of communications which were not only of more general scientific interest, but which had a very direct bearing on the problems of clinical medicine.

Physiology of the Nervous System.

In the sections concerned with the physiology of the nervous system the question of the possible sympathetic innervation of voluntary muscles formed the subject of several papers. On the whole the tendency of the meeting was to regard the case as not proven; several workers (including Profs. Bottazzi and Hess) reported that they had been unable to find that interference with the sympathetic system had any effect on either the tone or the nutrition of skeletal muscle. One of the most interesting demonstrations was given by Prof. R. Magnus (Utrecht) on the postural reflexes due to the labyrinth and mid-brain. Prof. Magnus showed how the balancing and "righting" reactions can be analysed into a series of simple reflexes by the use of guinea-pigs and rabbits with the cerebrum removed. The clinical importance of these reflexes has been pointed out recently by Dr. F. M. R. Walshe, and their interest for the neurologist is increased by Dr. G. G. J. Rademaker's demonstration of their connexion with the red nucleus and cerebro-spinal tract. In the cinematograph exhibits Prof. G. P. Zeliony (Petrograd) sent a film showing the behaviour of a dog three years after complete removal of the cerebral hemispheres. This animal illustrated certain phenomena which had not been observed by Goltz in his classical experiment, and the central nervous system in general exhibited extreme irritability. When played with the animal behaved in the manner characteristic of a puppy, lowering itself on its front legs, wagging its tail, and continuing to run and jump about.

Prof. A. KROGH (Copenhagen) gave a very beautiful cinematograph demonstration of the capillary circulation in various organs of the body. The film itself was a triumph of technique and gave a very vivid picture of the conditions under which gaseous exchange in the tissues takes place.

Physiology and Psychology.

In a most suggestive lecture entitled "Les voies non sensorielles de la connaissance et la méthode expérimentale," Prof. RICHET dealt with the borderland of physiology and psychology. He began by warning his audience that the matter which he was about to put before them was of a very revolutionary nature, and was likely to meet with vigorous opposition; but he contended that many of the most distinguished physiologists of the past had been great revolutionaries, in that they had faith in the experimental method, and had rejected the theories and concepts of all those who refused to take experimentation for their guide. His thesis was to prove by the experimental method that there were for the knowledge of reality other channels than the normal sensory channels. It was thought that we could not comprehend reality by other means than by the five senses, that a circumstance would remain still unknown to us, if sight, touch, and hearing had not revealed it. That was the classic idea. To admit, for one moment, that consciousness could grasp a circumstance by means other than the senses, was an idea which would be regarded as revolutionary. He suggested the hypothesis that the events of the external world could actuate our intelligence in some other way which was not at present understood, by a hidden form of sensibility which he termed "cryptesthesia." He asked his audience to consider a similar example. They were not conscious of any music in the room where he was speaking. They heard nothing and could almost affirm that there were no musical vibrations there. But if they took the receiver of a wireless telegraph apparatus, everybody might hear a concert which was proceeding miles away. It sufficed to get a receiver to prove that there were such vibrations in their midst. Similarly there might be ways open to our consciousness other than the familiar way of the senses. In considering such possibilities, scientific investigators should not let themselves be prejudiced by the credulity of the spiritist. He would like to see the facts, which depended on observation, investigated experimentally.

Physiology of the Cardiovascular System.

In the section dealing with the physiology of the cardiovascular system, Prof. C. J. WIGGERS (Cleveland) demonstrated some very beautiful instruments which he had used for making optical records of the heart sounds in man, and of the pressure changes in the heart of animals. In a series of experiments dealing with the dynamics of premature ventricular contractions in the dog produced by artificial stimulation, he had found that the volume of blood discharged from the ventricles varied with the time available for ventricular filling and with the intraventricular tension, the latter factor depending not only on the duration of diastole, but also on the rate of venous filling of the heart.

Dr. J. CRIGHTON BRAMWELL and Prof. A. V. HILL (Manchester) demonstrated a very sensitive recording instrument, the "hot-wire sphygmograph," which they had used for measuring the velocity of the pulse-wave in man. From these observations they were able to determine the elasticity of the arteries in the living body, and to investigate the variations in arterial elasticity met with in different pathological conditions. This instrument had also been employed for recording muscular tremor.

Dr. JANE SANDS (Philadelphia) showed a series of X ray photographs, illustrating alterations in the size and shape of the dog's heart, following artificially induced aortic regurgitation. Immediately after operation the heart appeared longer and narrower. Later the size of the heart shadow was increased and displaced leftwards, but electrocardiographic examination did not show any evidence of left ventricular preponderance.

Nervous Activity and Heredity.

At the concluding session of the congress Prof. PAVLOV, in the course of a paper dealing with inhibition, described some extremely interesting and important experiments on conditioned reflexes. He pointed out that in this connexion a question of the greatest importance was whether the highest nervous activity—that is to say, individual perfection—might be of use to the next generation. Was it hereditary? They had tried to find the answer to that question,

[1] THE LANCET, July 28th, p. 183. [2] Ibid., p. 198.

and had established the conditioned food reflexes in white mice, using the sound of an electric bell. With the first set of wild white mice it was necessary to repeat the combination of ringing the bell and feeding 300 times, in order to form the well-established reflexes. The next generation formed the same reflexes after 100 repetitions, the third generation after 30, the fourth generation after 10, and the fifth after 5 repetitions only.

Public Health Services.

THE HEALTH OF LONDON IN 1922.

Sir William Hamer's annual report as medical officer of health and school medical officer to the London County Council is so full of interesting matter that our first obvious duty is to point out that copies can be obtained (price 2*s.* 6*d.*) from P. S. King and Sons, Limited, Westminster. The death-rate of London was 13·5 in 1922, to be compared with 12·5 in 1921. The infant mortality rate was 75, and Sir William Hamer submits a table showing that a remarkable fall has taken place in the mortality from premature birth and congenital defects during the past three years. It is suggested that the replacement of the unqualified midwife, maternity benefit, maternity homes, and the recent increasing concern for expectant and nursing mothers have played their part in producing this result. The boroughs which show the greatest relative improvement in infant mortality since 1911–14 are Greenwich, Battersea, and Poplar, while St. Pancras and Kensington have lost place.

The small outbreaks of *small-pox* have been of a severe type, in contrast with the mild type prevalent lately in the North and Midlands. In all 65 cases were notified in London, of which 20 ended fatally, a case mortality of 30·8 per cent. Of 5 cases, showing no signs of vaccination and in which vaccination was doubtful, 3 died, 2 recovered; of 14 unvaccinated 7 died, 7 recovered; of 46 vaccinated in infancy 10 died, 36 recovered. The three shortest intervals between primary vaccination and the attack were 14, 16, and 16 years respectively; the three shortest intervals between primary vaccination and a fatal attack were 43, 44, and 49 years respectively. In 1901 the weak spot in the defence of London was the difficulty in identifying many cases of the disease. Thanks to the research work of the late Dr. T. F. Ricketts that defect has now been remedied, and the services of Dr. W. McC. Wanklyn, who has carried on the traditions of Dr. Ricketts, have been placed at the immediate disposal of the medical profession of London whenever a suspected case arises.

Sir William Hamer deals again with the influence of the movement of the population on the *phthisis death-rate* in London, and quotes Dr. M. Greenwood on the question of bringing "unsalted" (rural) populations into contact with urban civilisation, and the conclusion of the latter that "adolescent migration perhaps increases mortality in both populations—rural mortality by the withdrawal of those best fitted to survive under the rural environment, urban mortality by the introduction of those ill-adapted to survive under urban conditions." The apparent arrest of the downward trend of the phthisis death-rate in London (in 1922 it was 1·08) which occurred about 1911 is associated with decrease in the emigration of phthisical persons and with the transfer to London of deaths of London residents taking place elsewhere.

The report deals at length with the decline of *typhoid fever* during the last 20 years and the disappearance of the autumnal rise, and gives an interesting diagram showing the incidence of typhoid fever in four-weekly periods on the boroughs of London since 1891. The main burden fell in the past upon people living in certain poor areas from the thirty-seventh to the forty-eighth week of the year. The problem in London has now been narrowed down to examination of the parts played by fish and shell-fish respectively. After analysis of the notification figures, Sir William Hamer concludes that there is little evidence of infection by cockles and mussels, and that "the London evidence, at any rate since 1891, incriminates mainly flat fish, generally plaice, almost always purchased as cooked (fried) fish, and often in an ungutted state." The first-hand evidence of hundreds of patients has been taken. The incriminated fish are immature plaice from 4 to 10 in. long which used to be brought to London from fishing-grounds near the mouth of the Elbe. In 1906 the London County Council raised the question with the City Corporation as to the need for the inspection of these small fish at Billingsgate, and since 1907 the fishing-grounds in question have been gradually abandoned by English trawlers. The decline of typhoid fever in London has tallied very closely with the disuse of these grounds as a source of London food-supply.

With regard to *venereal diseases*, Sir William Hamer comments with satisfaction on the decline in new cases of syphilis and the fact that the new cases of gonorrhœa are gradually approximating to the relative figures of 1 of syphilis to 3 of gonorrhœa, hitherto held to be the ratio of cases in the community. Other satisfactory features of the scheme are that the ratio of attendances to new cases goes up year by year and that the medical practitioners make increased use of the pathological facilities provided. There are 28 centres in London, and it is interesting to observe that 19·1 per cent. of the new cases attend the model clinic at St. Thomas's Hospital, and further that 28·3 per cent. of the attendances and 25·4 per cent. of the pathological examinations are made at this clinic. Sir William Hamer thinks that the failure to complete treatment is not so serious as generally supposed, and that the strictness of the definition of cure has given rise to erroneous impressions. He further states that there are good grounds for believing that the work done at the V.D. clinics in London will compare very favourably with that obtaining in those colonies where the system of compulsory notification and attendance is in operation.

The census of 1921 showed that the general distribution of the available *housing accommodation* was better than in 1911. "It is a very striking fact that in the majority of boroughs there has been a distinct improvement in respect of overcrowding conditions, especially in the central and eastern districts, which are largely occupied by the poorer classes."

Sir William Hamer gives a summary of a further investigation carried out by Dr. F. C. Shrubsall and Dr. A. C. Williams into the relationship between delinquency and *mental deficiency*. Full use is not made of the accommodation at St. Margaret's Hospital for ophthalmia neonatorum, and the Departmental Committee on Blindness think it would be preferable to secure the use of a few beds for this disease at several of the well-known teaching hospitals.

The *school report* shows that 199,812 children were inspected belonging to the three age-groups of entrants, 8-year-olds, and 12-year-olds. Of these a smaller percentage needed treatment than ever before, the percentage figure being 37·9. The figure for 1921 and 1920 was over 39, for 1919 over 42, and for 1918 44. Malnutrition was greatly reduced during the artificial prosperity of the war. In 1920 there was a set-back and remedial measures, such as school feeding and unemployment allowances, came into play, allied with children's care organisations, and now it is satisfactory to learn that the number of children actually suffering from under-nourishment is lower than when war prosperity was at its height. The wonderful progress made in cleanliness is excellent news, as also the astonishing improvement in dental conditions. Children are now leaving school who came under dental inspection at the ages 6 to 8. Unhealthy conditions of the throat and nose, though still rife, show year by year a diminishing incidence, and "there is good ground for the belief that greater attention to hygiene is really diminishing the prevalence of nasal disease." There is a diminishing number of children referred for tonsils and adenoids, and this gives an opportunity for the introduction of more adequate methods than formerly. The heavier incidence of visual defects upon

girls compared with boys tends to grow less, and the medical service is consistently endeavouring to lessen the bad effects of fine work. Dr. G. Chaikin has conducted an inquiry with regard to chorea and finds a tendency for cases of chorea to follow inversely the rise and fall of the barometric pressure, but has not traced a relationship between relative humidity and the incidence of chorea. The insidious onset of rheumatism is the difficulty, and stress is laid upon the necessity for attention to unhealthy throat conditions.

Dr. C. N. Atlee has investigated the *prevalence of goitre*. Of 77 goitrous children, 21 had apparently normal health, while of the remaining 56, 10 were mentally defective, 4 were congenitally deaf, 1 had congenital heart disease, 1 congenital cataract, and 3 were epileptic. Dr. Atlee is of opinion that goitre has increased latterly. Dr. A. G. Wells reports favourable results from *ionisation for ear disease*. Of 155 children treated, 108 were put right by one ionisation.

The Board of Education have made certain suggestions for the improvement of the *treatment scheme*, and important modifications have been made in the agreements between the Council and committees of treatment centres with a view to obtaining the highest available standard of work at the centres.

SCHOOL MEDICAL SERVICE.

Blackburn.

THE total number of children examined was 7487, and of these 6067 came under the code groups. Forty cases of malnutrition are recorded at routine inspection and Dr. Allen Daley refers to malnutrition as the one defect where statistics of different places are not comparable owing to the personal factor influencing the examiner's judgment as to what is malnutrition and what is not. We would refer Dr. Daley to the work of the nutrition clinics in America, where a standard ratio of heights and weights is taken for different ages, and any variation above or below this is classified. In this way a standardised conception of nutrition and malnutrition is obtained, eliminating as far as possible the personal factor.

Dr. Daley, in common with the school medical officer for Cardiff, draws attention to the large number of children not physically fit at 5 years of age, and this is true for all the country. Maternity and child welfare departments are normally responsible for safeguarding the health of children up to the age of 5 years, or previous to their admission into school. It is impossible to exercise more than a casual supervision over children more than 2 years of age, and further, mothers are usually reluctant to take older children to a clinic, which they regard as primarily for babies. It appears that the next forward step in public health administration must be concentrated on this "No Man's Land" between 2 and 5 years. School clinics are open to these children very often, but they do not by any means adequately supply the crying need of careful examination, training, and observation of these little ones, and to bridge the gap between 2 and 5 in a place like Blackburn, a nursery school is evidently called for. Forty-six children were treated for speech defects. Two revision courses of three weeks were also taken; a brief summary of the results is given:—

Speak well and clearly—no stammer ..	34
Speak with occasional hesitation	4
Improved	6
No better	2

Dr. J. Robertson investigated the alleged association between left-handedness and stammering, and it was demonstrated that there was no special connexion between them.

Carlisle.

Of the 2483 children inspected in the routine age groups, nearly 25 per cent. were referred for medical treatment, and 42 per cent. were kept under observation for defects. Of the number referred for treatment 96 per cent. received it. Malnutrition cases amounted to 379, or 15 per cent.; as compared with 9 per cent. the previous year; 18 per cent. were suffering from defective vision, 2 per cent. from defective hearing; tuberculosis definite and suspected 4 per cent. The decrease in the number of cases suffering from scabies and ringworm is considerable, scabies accounting for 516 cases as compared with 2360, and ringworm 476 as compared with 3384. Dr. Joseph Beard has calculated that the eradication of scabies and ringworm has increased school efficiency since 1919 to the extent of an additional daily attendance of 77 children, or 1 per cent. on the average daily attendance. One hundred and four school-children attended the tuberculosis dispensary during the year, 15 being new and 89 old cases. The school dentist's report shows 91 per cent. of the permanent teeth examined sound, 6·2 per cent. saveable, and 1·9 per cent. unsaveable, against 88 per cent., 9 per cent., and 2·9 per cent. respectively for the previous year. He regards the production of the largest percentage possible of sound permanent teeth as the main object of school dental work. He finds that the bad septic mouth is now the exception rather than the rule, and that the children's teeth are on the whole cleaner and their mouths healthier.

Cardiff.

The total number of medical examinations for 1922 was 9911 in the routine groups and 2563 special cases. Skin disease was recorded in 7·2 per cent., defective vision in 6·6, and otitis media in 2 per cent. On the whole the proportion of children showing defects of one kind or another is remarkably constant, such slight increases as have occurred being mainly due to the increased number of special cases examined. Malnutrition was found in 0·9 per cent., these figures being the same as for 1920. Dr. Ralph M. F. Picken has set out the tables of heights and weights for 1914, 1921, and 1922, to demonstrate the absence of any notable change since the beginning of the war.

The number of children found or suspected to be suffering from tuberculosis was 76. These children were all attending school at the date of examination. During the year 17 children between 5 and 15 years of age died of tuberculosis. Remaining at the end of the year were 35 children known to be suffering from or suspected of tuberculosis and excluded from school for this reason, while other 14 children of school age had never attended because of tuberculosis. Altogether the total number of cases of tuberculosis between 5 and 15 years of age whose names remained on the records at the end of the year amounted to 123, and Dr. Picken goes on to say that none of these ought to be in attendance at the ordinary school but many would be suitable for education in a special school. Out of 4087 children commencing school life, 32·3 per cent. were found to require either medical treatment or observation. The existence of such a percentage of disease or ill-health in pre-school years definitely points to the necessity for establishing a nursery school in Cardiff to follow on the child welfare centres. Of the 2775 children requiring treatment during the year, the necessary treatment was carried out in 61·3 per cent. of the cases.

Three cases of accidentally acquired syphilis are recorded, all of which cleared up rapidly after a course of novarsenobenzol injections and hydrarg. cum cret. at the V.D. clinic. The superficial resemblance which the cases bore to ringworm, impetigo, and psoriasis diverted the attention from the possibility of secondary syphilis, and it was only after a more complete examination that the true nature of the disease was established.

Leamington Spa.

The number of children examined in the three code groups was 1102, an increase of 316 over last year. Apart from uncleanliness and dental defect, 13 per cent. were found to require medical treatment. This was carried out at the hospital in 301 cases out of the 392 requiring it. Sixty per cent. of the children in attendance at school were found to be unvaccinated, and Dr. W. L. Goldie puts this state of affairs down

more to apathy on the part of the parents than to a conscientious objection to vaccination. In the case of entrants, the figures were 2 per cent. worse than those of the previous year and 8 per cent. worse than in 1920.

Eastbourne.

The total number of children examined during the year was 1285, 28 of these being special cases. In 48 per cent. of the cases the parents attended. Malnutrition cases were less than half the number recorded last year owing to an improvement in economic conditions in Eastbourne. Uncleanliness and skin diseases have decreased, but no fewer than 50 per cent of the children examined had defects recorded. Clinics are held daily at the Town Hall, and operations are performed at the hospital. Altogether 3083 children attended the various clinics, making 6544 attendances. Dr. W. G. Willoughby reports that the open-air school opened in June, 1920, has fully justified its existence. At the end of the year there were 60 children, boys and girls, on the books. The majority of cases are suffering from anæmia and malnutrition, free meals being given where necessary, also hot milk in the mornings. The cost to the education authority of this school for one year was just over £28, apart from salaries.

MENTAL HOSPITALS SERVICE.

ROYAL EASTERN COUNTIES INSTITUTION FOR THE MENTALLY DEFECTIVE, COLCHESTER.

The sixty-fourth annual report of this institution is an attractive publication, one of its purposes being to gain new subscribers to the institution. The illustrations give a happy impression of its activities. Influential support has been given to this institution throughout the Eastern Counties; a large sum is added annually to the funds by means of collections in various towns and districts undertaken by an organisation under the direction of the Duchess of Grafton. Of the children, who form the main body of the inmates, a great number are cared for at rates which bear no relation to the cost of maintenance, and the expenses of the institution, as well as its further expansion, are therefore largely dependent on subscriptions.

The numbers accommodated have increased greatly during the last few years, and a sixth branch home has recently been opened. An excellent site is available for a rebuilding scheme, which would not only provide additional and better accommodation, but simplify the management and reduce the cost of upkeep at present involved in maintaining six separate branches scattered over a wide area. The output of the workshops, which afford occupation for many of the inmates, shows a notable increase, and domestic or outdoor work of some nature, however simple, is assigned to everyone capable of performing it, much to the benefit even of the lower grades, who may previously have felt that they were "no good to anyone." Games of all kinds—swimming, music, and acting and other entertainments—appear to take a large part in the life of the institution. A small proportion of the higher-grade cases leave the institution to take up work elsewhere, principally domestic service, and this system has been successful, but its extension to factory work is at present impossible owing to the prevalence of unemployment among normal persons.

There has been an increase in the number of epileptics admitted. The medical superintendent, Dr. F. D. Turner, does not regard their segregation from other patients as either practicable or really necessary. The results in these cases, which at present form 13 per cent. of the total population, are disappointing. Dr. Turner says of them: "Although we continue to test new remedies which are frequently brought out, I am unable to report any good results." The institution has been singularly free from infectious disease, and the deaths that have occurred have been principally among patients of the lowest grade, in whom the duration of life, owing to coincident physical feebleness, rarely exceeds 25 years.

Correspondence.

"Audi alteram partem."

THE TOOTH-BRUSH AS A CARRIER OF VIRULENT DIPHTHERIA BACILLI.

To the Editor of THE LANCET.

SIR,—Mr. A. T. Pitts, in his letter to THE LANCET of June 16th (p. 1238) on "The Rôle of the Tooth-Brush," drew attention to the risks attaching to the tooth-brush as a harbourer, and therefore potential spreader, of infection. In support of his statements, and directly bearing on these risks, the following note is perhaps worthy of record.

The occurrence of several cases of diphtheria at an industrial school in the Midlands led to an investigation by one of us (G. H. C.), with the object of discovering possible factors concerned in spreading the disease amongst the boys. A certain boy (E.) had previously been found with nasal excoriation which yielded, on swabbing and cultivation, abundant *B. diphtheriæ*, and he had, in consequence, been transferred to hospital. The tooth-brush used by this boy came under suspicion as a not unlikely vehicle of infection, and, to satisfy curiosity on this point, was submitted to J. G. F. for bacteriological examination.

It should be stated that the brushes belonging to the boys were each clearly marked with the owner's number, and when not required were hung separately by means of rings from a shelf in the school lavatory. "Carbolic" tooth-powder was in general use, and was supplied to the boys from a common bowl. It was stated by the superintendent of the school that, following E.'s removal to hospital, he had as a precautionary measure soaked E.'s tooth-brush (and also the brushes of other boys) for 36 hours in a 5 per cent. solution of a disinfectant of the lysol class. During the period of about ten days, which elapsed between this soaking and its removal on May 23rd for bacteriological examination, the brush in question had been hanging in its usual place in the school lavatory.

Bacteriological Examination. — The brush was received a fortnight after being last in use by E. The lower half of the bristles and their insertion into the bone holder were coated with the remains of pink tooth-powder. About a score of bristles were detached and cultivated on the surface of plated blood-serum. After 24–48 hours' incubation it was possible to select from the mixed growth investing the various bristles a certain number of the most likely looking colonies. These were pricked off and transferred to sloped serum tubes and incubated at 37° C. The sub-cultures resulting consisted of various cocci and bacilli, and included in the latter group were certain diphtheroids and what appeared to be morphological *B. diphtheriæ*. On further sub-culture the latter were definitely isolated and identified microscopically, and were also found to ferment glucose, but not saccharose. Confirmatory evidence as to the true character of the isolated organism could only be supplied by animal test. For this very necessary means of proof we are much indebted to the kindness of Drs. W. M. Scott and A. J. Eagleton, to whom separate sub-cultures were sent. Their independent results by animal-inoculation tests showed the organism to be indisputable virulent *B. diphtheriæ*.

There is, therefore, no doubt that a tooth-brush may, as Mr. Pitts stated, "harbour infection," and, although not proven in the instance here recorded, it is highly conceivable that by mixed brush contact, or if "used promiscuously" by others than its owner, the tooth-brush may lead to the dissemination of infection from an active diphtheria "carrier." The use by the boys in common of the tooth-powder bowl suggests a further possible means of spread. It would also appear that the practical disinfection of tooth-brushes, whether by the particular powder in favour or by immersion in reputed "disinfectant"

solution, may be by no means as reliable or effective as is commonly believed.

Lysol Disinfection of Artificially Infected Tooth-Brushes.—To test this point under conditions as nearly approaching the real as possible, three used tooth-brushes were dipped in 5 c.cm. peptone emulsion of a 24 hours' serum slope culture of the *B. diphtheriæ* derived from E.'s brush. The brushes were then allowed to dry in the incubator in covered Petri dishes and were afterwards soaked in solutions of the same brand of lysol as that used at the school, which in 2 per cent. strength purports to kill *B. diphtheriæ* in one minute. The strengths of the lysol used for the tests were 1, 2, and 5 per cent. dilutions, in each of which the separate brushes remained for periods of 1, 5, 15, and 30 minutes, and finally 24 hours.

At the conclusion of each of the periods, and after a brief rinsing in sterile water to remove excess of lysol, bristles were extracted with every possible precaution against contamination, allowed to dry for a few minutes in sterile Petri dishes, and then transferred to the surface of plated serum for 24 hours' incubation at 37° C. Previous to the lysol immersion a few bristles were removed from each artificially infected brush for control cultivation.

The final results of a series of repeated tests were as follows: 1. *B. diphtheriæ* were isolated from each of the three controls, which were also heavily but not equally infected with various cocci, sarcinæ, and unidentified bacilli. 2. Using freshly prepared lysol solutions, *B. diphtheriæ* were successfully isolated in two series of tests from bristles of brushes which had been exposed for 1 and 5 minutes to a 2 per cent. solution, and for 1 minute to a 5 per cent. solution of lysol. A suspicious bacillus was also isolated from 5 per cent. lysol after 5 minutes' exposure, but proved to be a diphtheroid, resembling *B. xerosis*. 3. Using lysol solutions, which had been standing for at least two days, *B. diphtheriæ* were obtained from bristles after exposure to a 5 per cent. solution for as long as 15 minutes.

A culture of the *B. diphtheriæ* which had been isolated from bristles exposed to 2 per cent. lysol for 5 minutes was submitted to Dr. Scott, who again very kindly applied a guinea-pig test, and has reported the strain to be "still virulent." We are also much indebted to Dr. C. C. Okell, who found the diphtheroid, already mentioned, to be avirulent; but the *B. diphtheriæ*, surviving 5 per cent. stale lysol for 15 minutes, was virulent. Such results were to be expected, as the parent culture from E.'s tooth-brush had also proved virulent, and no change in virulence was likely to occur as the result of the surviving organism's exposure to the disinfectant.

Whilst accepting with some reserve the accuracy of the 5 per cent. strength of the lysol solution, in which E.'s tooth-brush was reported to have been soaked for 36 hours, it is not improbable that the diphtheria bacilli were in some measure protected from the action of the lysol by accumulations of oral mucus and tooth-powder adherent to the bed of the brush.

Under the conditions of the imposed tests with the various lysol solutions, no such protection was afforded to the organism on the artificially infected bristles and presumably the bacillus would be more readily killed, although it proved capable of withstanding the action of a 5 per cent. lysol solution for at least 15 minutes. Mention should be made of the omission to note a point of some importance which was overlooked in the quite unexpected discovery of *B. diphtheriæ*—namely, whether the original diphtheria colonies from E.'s brush were derived from the embedded, and therefore protected, root or from the free end of the bristles.

Subsequent attempts at some weeks' interval were made to obtain this information by planting a further series of bristles from E.'s brush on to plated serum; but the results proved inconclusive, in that the chance successful finding of *B. diphtheriæ* was not repeated; however, the embedded loops of the bristles clearly showed, from the more abundant growth, that they were more heavily contaminated than the free ends.

In view of Mr. T. H. Marshall's letter in THE LANCET, also of June 16th, urging the need of "A Standard for Lysol," it was obviously important to know the composition of the particular brand of lysol used in the above tests. For this information we are much indebted to Mr. E. T. Shelbourn, F.I.C., whose analysis was as follows: Water, 12·5 per cent.; phenolic bodies distilling between 196° and 208° C., 46·2 per cent.; soap, &c., 41·3 per cent.—i.e., very similar to the original lysol, containing approximately 50 per cent. cresylic acid.

The tests undertaken with lysol in the three dilutions are not claimed to be sufficiently comprehensive as to yield a conclusive index of this disinfectant's bactericidal power. They were applied primarily to ascertain what dilution and length of exposure were necessary to inhibit or destroy *B. diphtheriæ* on artificially infected tooth-brushes. Under such artificial conditions it would appear that immersion for one minute in a 5 per cent. solution, or for five minutes in a 2 per cent. freshly prepared solution of standard lysol is insufficient to kill the organism.

From the diminished bactericidal power of lysol shown by results in the third series of tests, the importance of the solutions being freshly prepared appears evident. The tooth-brushes employed differed considerably as regards their original state of bacterial pollution and their mode of construction, which allowed of retention of impurity to a varying degree. For these reasons it proved difficult to assess the strength and duration of lysol treatment required for sterilising any individual brush. Whereas, for one less heavily infected, immersion for half an hour in 2 per cent. solution sufficed to sterilise the majority of bristles; in the case of another brush, after 24 hours in a 1 per cent. solution, the growth of cocci and spore-forming bacilli still obtained, was sufficient to mask the isolation of *B. diphtheriæ;* whilst bristles from a third brush required half an hour's exposure to a 5 per cent. solution before effectual sterilisation was reached. In the case of solutions not freshly prepared, 24 hours' exposure in 2 per cent. solution was insufficient to sterilise, but 5 per cent. solution for half an hour was effective for the majority of bristles.

If, as stated, E.'s tooth-brush was soaked in 5 per cent. lysol for 36 hours, the strain of *B. diphtheriæ* surviving was either unusually resistant, or more probably was so protected in the deeper part of the brush as to be beyond the reach of the disinfectant. Such a brush infected by a diphtheria carrier may well require longer than half an hour in 5 per cent. solution lysol for its disinfection, and the safest course is obviously to destroy it. The fact that the tooth-brush is but one of many likely vehicles of infection from a diphtheria carrier opens up a wide field for survey—particularly in residential schools—in dealing with an outbreak of diphtheria.

Among the articles to be considered are pencils and penholders,[1] spoons and forks, common drinking cups at playground fountains, school call whistles, the mouthpieces of bugles or band instruments, and—amongst boys—the cigarette not uncommonly passed from mouth to mouth. Surgeon-Commander S. F. Dudley,[1] in drawing attention to the penholder as a possible source of spread of diphtheria infection, states: "Nearly all children bite the ends of their pens, and, as this is so, a penholder must be looked on as an even more personal article than a tooth-brush. The latter is in the mouth for shorter periods than the pen, and in addition is generally soaked with a solution of some antiseptic dentrifice."

The case here recorded, however, shows that the risk of infection attaching to the tooth-brush, despite implied antiseptic protection, may be no less than that of the penholder.

The survival of organisms on tooth-brushes exposed to lysol offers a tempting analogy to the behaviour of soil bacteria in the presence of phenol, cresylic acid, and naphthalene, suggesting that some of the varied flora

[1] Medical Research Council, Special Report Series, No. 75, pp. 46 and 47. A Study in Epidemiology, by S. F. Dudley.

of the mouth may have similar powers, not only of resistance to "disinfectant" action, but, as has recently been shown by experiments, with bacteria of the soil at Rothamsted,[2] of actual growth by splitting up the antiseptic and so causing its disappearance.

We are, Sir, yours faithfully,

G. H. CULVERWELL, M.D., D.P.H. Dub.
J. GRAHAM FORBES, M.D. Camb.,
F.R.C.P., D.P.H.

London, July 31st, 1922.

ROYAL MEDICAL BENEVOLENT FUND.

To the Editor of THE LANCET.

SIR,—It is reported that Dr. G. E. Haslip, treasurer to the British Medical Association, speaking at the recent annual meeting of the lack of support of the Royal Medical Benevolent Fund, stated that "the funds are conducted in much the same way as they were 30 years ago; no new ideas are ever introduced, and there is absolutely no progress."

This may be correct with respect to the administration of the Fund, probably necessarily so having regard to the limited sums at the disposal of the Committee, but I venture to think that a new idea of a progressive nature was introduced when the medical practitioners on the panel in Leicester consented unanimously to subscribe annually towards medical and allied charities a farthing for each State-insured person on their lists. This yields over £100 per annum, and £50 have been given to the Royal Medical Benevolent Fund for each of the last two years, and in all probability a similar sum will be sent this year. The remainder of the amount raised is distributed locally to medical and allied charities.

I would suggest that steps be taken to urge every State insurance area in the country to follow this example. If this were effected, the "disgrace to the profession" would be quickly removed as the sum accruing on, say, 10 million insured persons, would be upwards of £10,400 per annum. This would enable the Committee to deal with a more generous hand, and the stigma of "miserable doles" would be a thing of the past. I am, Sir, yours faithfully,

ASTLEY V. CLARKE,
Treasurer, Leicester Sub-Division of Union of Medical Practitioners.

Leicester, July 27th, 1923.

OPHTHALMOLOGICAL TRAINING FOR MEDICAL STUDENTS.

To the Editor of THE LANCET.

SIR,—If ophthalmology is to be made a subject for the qualifying examination, in my opinion it would be advisable for ophthalmologists to set out what they regard as essential for the medical student to know. For clearly ophthalmology as a whole must be a post-graduate study. With the idea of arriving at some definite conclusion on this point, I suggested to the Council of the Ophthalmological Section of the Royal Society of Medicine a year or two ago that I should open a discussion on the teaching of ophthalmology to medical students.

To take one point, which might be usefully discussed—namely, the use of the ophthalmoscope—it is quite possible for the student to learn how to handle the instrument, and to see the disc, and perhaps draw what he sees. But it is impossible with the short time at his disposal to acquire any useful knowledge by means of the instrument, in the sense of being able to recognise early papillitis, slight optic atrophy, or retinitis. And apart from the ability to do that, I much doubt if the ophthalmoscope be of any use in general practice.

I have always grudged the relatively large proportion of time spent by students in the dark room On the one hand they were not learning anything practically useful, and on the other hand they were missing opportunities of examining cases of external diseases, conjunctivitis, iritis, and the like, cases which are of frequent occurrence in general practice, and the recognition of which is so important. And the same criticism applies, I think, to time spent in learning to estimate—as distinct from learning to recognise—errors of refraction.

I am, Sir, yours faithfully,
Harley-street, W., July 31st, 1923. PERCY FLEMMING.

THE TREATMENT OF HABITUAL CONSTIPATION.

To the Editor of THE LANCET.

SIR,—I was greatly interested in Dr. A. F. Hurst's article on the Treatment of Habitual Constipation.

I have seen some of the most serious cases of habitual constipation *cured* by the persistent use of the liquid extract of cascara, but as a rule it takes 6 to 12 months to effect a cure. At first 20 to 30 drops ought to be taken three times a day in water after meals. After a few weeks the dose can be very gradually lessened, until at the end of five or six months it is reduced to three or four drops, or even to one drop three times a day. This treatment teaches the bowels to get into the daily habit of evacuation. The difficulty is to get patients to persevere over so long a period until a cure is effected.

Habitual constipation has been treated "by suggestion." The method is certainly worth trying in some of the most serious cases. I may note a remarkable case which came under my notice. The patient, an American lady, consulted a well-known authority on hypnotism, who, after a short consultation, told her that her case was very simple, and that she would have a daily evacuation of the bowel every morning at 10 o'clock. Some time after she appeared again with the report that she was perfectly cured, but requested that the physician would make the time 9 o'clock as the earlier hour would be more convenient.

I am, Sir, yours faithfully,
SAMUEL R. COLLIER, M.D.

Wimbledon, July 24th, 1923.

THE MEDICAL DIRECTORY, 1924.

To the Editor of THE LANCET.

SIR,—The annual circular has been posted to every member of the medical profession and most of the returns have already been received. If any practitioner has not yet sent us the latest information, we shall be glad to receive it by an early post.

We are, Sir, yours faithfully,
THE EDITORS.

7, Great Marlborough-street, London, W. 1,
July 30th, 1923.

LIVERPOOL ROYAL INFIRMARY: NEW NURSES' HOME.—The Duke and Duchess of York paid a visit to the city on July 24th, principally for the purpose of laying the corner stone of the new building. The first portion is estimated to cost between £40,000 and £50,000, of which all but about £5000 have already been collected. The proceedings included the presentation of a Carnegie Hero Trust bronze medallion to Mr. C. R. Woods, who has been X ray operator to the infirmary since 1903, and who is now incapacitated by X ray dermatitis from further service.

PEOPLE'S LEAGUE OF HEALTH.—The travelling scholarship prize award in connexion with the Sims Woodhead series of Constructive Educational Health Lectures recently given by the League at the headquarters of the National Union of Teachers, Mabledon-place, London, W.C., has been made to Miss Alice Gloyn. Miss Gloyn, who since 1917 has been in charge of the Camberwell Day Sanatorium, working under the London County Council in conjunction with the tuberculosis officer for Camberwell, has chosen to attend Dr. A. Rollier's course of lectures on heliotherapy at Leysin in Switzerland, from August 13th to 19th. Miss Gloyn will also visit the Grancher and other institutions in France dealing with tuberculosis in children.

[2] The Bacteria of the Soil and the Utilisation of Organic Antiseptics. By P. H. H. Gray, M.A. (Rothamsted). "Discovery," June, 1923, p. 153.

Medical News.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—An ordinary Comitia of the College was held on July 26th, Sir Humphry Rolleston being in the chair.

The following candidates, having passed the required examinations, were admitted as Members:—

Drs. F. Braid, R. A. Chambers, E. F. Creed, S. W. Davidson, S. C. Dyke, H. S. Le Marquand, G. R. McRobert, O. Marriott, W. Moodie, W. J. Morrish, E. O'Flynn, A. Patrick, G. M. J. Slot, G. H. Sowry, W. B. B. Taylor, G. D. Whyte, and W. B. Wood.

Licences to practise physics were granted to 193 candidates. Diplomas were granted, jointly with the Royal College of Surgeons, in Public Health to 19 candidates, in Tropical Medicine and Hygiene to 16 candidates, in Psychological Medicine to 8 candidates, and in Ophthalmic Medicine and Surgery to 11 candidates.

The following College Officers, Members of Committees, and Examiners for the ensuing year were elected on the nomination of the President, Council, and Library Committee:—

Censors.—Dr. John Fawcett, Dr. H. Morley Fletcher, Lord Dawson of Penn, and Dr. E. Farquhar Buzzard.
Emeritus Treasurer.—Sir Dyce Duckworth.
Treasurer.—Dr. Sidney P. Phillips.
Registrar.—Dr. Joseph A. Ormerod.
Harveian Librarian.—Dr. T. H. Arnold Chaplin.
Library Committee.—Dr. Herbert Spencer, Dr. W. Cecil Bosanquet, Dr. George F. Still, Dr. Charles J. Singer.
Curators of the Museum.—Dr. J. Mitchell Bruce, Sir Seymour John Sharkey, Sir Frederick W. Andrewes, Dr. William Hunter.
Finance Committee.—Dr. Arthur T. Davies, Dr. Raymond H. P. Crawfurd, Dr. Frederick J. Poynton.
Examiners.—Chemistry: Dr. William B. Tuck and Mr. Charles S. Gibson. Physics: Dr. Frederick Womack and Dr. William E. Curtis. Practical Pharmacy: Dr. Alfred E. Russell, Dr. Edward A. Cockayne, Dr. Philip Hamill, Dr. Alfred J. Clark, Dr. Walter E. Dixon. Physiology: Dr. John B. Leathes and Dr. John Mellanby. Anatomy: Dr. Thomas B. Johnston. Medical Anatomy and Principles and Practice of Medicine: Sir Archibald E. Garrod, Dr. John H. Drysdale, Dr. Arthur P. Beddard, Dr. William C. Bosanquet, Dr. James W. Russell, Dr. Charles R. Box, Sir James Purves-Stewart, Dr. Charles Bolton, Dr. Lewis Albert Smith, Sir William H. Willcox. Midwifery and Diseases Peculiar to Women: Dr. John P. Hedley, Sir Ewen John Maclean, Dr. Thomas G. Stevens, Dr. John D. Barris, Dr. Henry J. F. Simson.
Public Health.—Part I., Dr. Henry W. Hake; Part II., Dr. David Samuel Davies.
Tropical Medicine.—Sir Percy W. Bassett-Smith (Bacteriology); Sir Leonard Rogers (Diseases and Hygiene of the Tropics).
Ophthalmic Medicine and Surgery.—Dr. Gordon M. Holmes.
Psychological Medicine.—Part I., Dr. Henry Devine; Part II., Dr. James Taylor and Dr. Charles H. Bond.
Murchison Memorial Scholarship (1924).—Dr. Robert Hutchison and Dr. E. Farquhar Buzzard.

The following communications were received:—(1) From Sir Thomas Barlow, a former president, to the Emeritus Treasurer, Sir Dyce Duckworth, offering a gift of £1000 to the general funds of the Royal College, with a view to special assistance in the probable alterations to the College buildings. The offer was accepted and a most sincere vote of thanks was voted to Sir Thomas Barlow for his generous gift.—(2) From Dr. R. W. Innes Smith offering a portrait of Sir Charles Searburgh for the acceptance of the College. The Harveian Librarian, Dr. Arnold Chaplin, pointed out that this was one of the two known portraits of this celebrated physician. The offer was gratefully accepted and the thanks of the College were accorded to Dr. Innes Smith.—(3) An invitation to the centenary of the foundation of the Edinburgh Veterinary College was received and it was left to the President to nominate a representative.

The Baly Medal was awarded, on the nomination of the Council, to Mr. J. Barcroft, F.R.S.—The President announced his award of the Bisset Hawkins Medal to Dr. T. M. Legge.—The death of the Bedell, Mr. William Fleming, was reported to the College, and in connexion therewith the following resolutions were passed:—

1. That the College desires to place on record its deep regret at the death of Mr. William Fleming, and its high appreciation of his faithful and valuable services, which extended over 50 years, during 30 years of which he held the office of Bedell to the entire satisfaction of the Fellows and of all those with whom he was brought into contact.

2. That it be referred to a committee to report on all the regulations and questions connected with the duties, residence, and remuneration of the Bedell, and of any other official who may be required to carry on the administrative work of the College.

A committee was appointed to consider and report on the question of increasing the accommodation of the College, and on the best way of doing so, should it prove desirable.—An application from Dr. Philip H. Wells for the restoration of the membership resigned by him in January, 1922, was granted.—A report from the representative of the College on the General Medical Council concerning the last session of the Council, and a report from the representative of the College on the Managing Committee of the Chelsea Physic Garden were received and entered on the minutes of July 16th.—A report from the Committee of Management, dated May 9th and July 16th, was received and adopted.—After some formal College business, the President declared the Comitia closed.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At a meeting of the Comitia of the Royal College of Physicians on July 26th, and of the Council of the Royal College of Surgeons on July 31st, diplomas of L.R.C.P. and M.R.C.S. were conferred upon the following 193 candidates (including 34 women) who have passed the requisite examination of the Conjoint Board and have complied with the by-laws:—

Patrick M. Acheson, King's Coll.; Noel F. Adeney, Cambridge and St. Mary's; Katharine M. Andrew, King's Coll.; William A. Atkins, Birmingham; George F. Axon, Charing Cross; Shriharsh Chintaman Bakhle, Guy's; William E. Barnie-Adshead, Birmingham; Alfred A. Battson, St. Thomas's; Arthur Beauchamp, Birmingham; Susanna M. Bernard, Royal Free; Douglas H. Berry, Guy's; John Bevan-Jones, Univ. Coll.; Thomas S. Blacklidge, Guy's; Nina O. Bohtlingk, Lausanne and Charing Cross; Edward R. Boland, Guy's; William B. Boone, Oxford and London; Jogesh Chandra Bose, Baltimore and Birmingham; John A. Brew, Middlesex; Enid A. Brock, Liverpool; Ralph Brooke, Guy's; Samuel N. Browne, Birmingham; William A. Caldwell, Guy's; Ralph H. Carter, McGill and London; Edward H. P. Cave, King's Coll.; Norman E. Chadwick, Cambridge and St. Bart.'s; John H. K. Clarke and Leslie T. Clarke, Birmingham; John E. Clegg, Manchester; Eric C. T. Clouston, London; Leon Collins, Leeds; George G. Cooke, Birmingham; Norman B. Cooke and Victor Cotton-Cornwall, Liverpool; Richard S. Creed, Oxford and St. Thomas's; Cecily D. Crosskey, Royal Free and Birmingham; John A. Currie and Gerald C. W. Curson, Guy's; William Dabbs, Birmingham; Cedric K. David, Univ. Coll.; Alfred B. Davies, Birmingham; Kenneth S. Dickinson, Durham; Michele A. Distaso, Bristol and Cardiff; Gerrit A. Dolman, Cambridge and King's Coll.; Helen M. Du Buisson, King's Coll.; Geoffrey Dudley, Birmingham; Alexander D. Dyson, Oxford and St. Thomas's; Francis Earlam, Liverpool; Harold C. Edwards, King's Coll.; Arthur J. C. Eland, St. Bart.'s; Harry N. K. Elphick, Oxford and King's Coll.; Robert H. Enoch, Cardiff and St. Bart.'s; Ursula E. Eva, St. Mary's; George M. Evans, St. Thomas's; Herman Evans, Cape and Guy's; John L. Faull, Guy's; Alec E. Fergusson, St. Thomas's; Mary D. Fletcher, Univ. Coll.; Kingsley Fletcher-Barrett, Cambridge and St. George's; Mary E. Fox, Royal Free and St. Mary's; Emily L. Franklin, King's Coll.; Noel G. C. Gane, Cape and Middlesex; Claudius E. Gautier-Smith, Cambridge and St. Thomas's; George F. Gibberd, Guy's; Albert D. Gladish, Univ. Coll.; Neville M. Goodman, Cambridge and London; Roy Goodman, Charing Cross; Arthur Gordon, Cape and Guy's; Brian W. B. Gordon, St. Mary's; William A. Gornall, Bristol; Arthur W. Gott, Leeds; Sydney A. Grant, London; Ernest H. Griffin, Cambridge and Guy's; Geoffrey E. R. Hamilton, King's Coll.; Alfred G. Hammond, Middlesex; Tatiana I. Hardy, Moscow and Royal Free; Albert J. Hawe, Liverpool; Montague Hawke, Guy's; Bernard D. Hendy, Cambridge and London; Gladys Hill, Royal Free; Nancy W. Holloway, Univ. Coll.; Max Honigsberger, Cape and Guy's; Mary D. Horton, Birmingham; Phyllis M. Horton, Royal Free and Manchester; Leslie G. Housden, Guy's; Edward R. Hughes, Liverpool and London; John T. Ingram, London; William O. C. Jarratt, St. Thomas's; Santo W. Jeger, London and St. Mary's; James Jemson, Guy's; Bertram H. Jones, St. Thomas's; Norman A. Jory, St. Bart.'s; Winifred A. Kane and Hilda M. Kennedy, Univ. Coll.; Maurice E. P. Killard-Leavey, Guy's; Geoffrey L. S. Kohnstam and Dushan Kostitch, King's Coll.; Emilia B. M. Krause, London; Kenneth H. Lachlan, Westminster; Ronald E. Lane, Guy's; Thomas Latham, Manchester; Harold V. R. T. Lauder, St. Bart.'s; Bernard J. Leggett, London; Meyer M. Lewin, St. Thomas's; John L. Lewthwaite, Liverpool; Carlos E. M. J. Libert, King's Coll.; Lewis O. Lindsay, London; Philip M. Lissack, Cape and St. Thomas's; William A. Lister, London; Basil S. Llewelyn, Cardiff and Westminster; James I. Lyons, Westminster; Cyril C. Mahoney, Madras and St. Mary's; Leslie P. Marshall, Cambridge and London; Charles A. Martin, London; Dorothy E. Mason, Royal Free and St. Mary's; Hugh R. Matthews, Cambridge and St. George's; Margarethe Mautner, St. Mary's; James Maxwell, St. Bart.'s; Margaret S. Mills, Royal Free; Elspeth B. Moffat, Cape and Royal Free; William B. R. Monteith, Cambridge and Univ. Coll.; John W. Morledge, Western Reserve; Alfred C. Mowle, Cambridge and St. Thomas's; John D. R. Murray, Cambridge and Middlesex; Louis Mushin, London; Albert Nathan and Maurice Newfield, Charing Cross; Edgar Obermer, Lausanne and St. Bart.'s; Herbert L. Oldershaw, St. Bart.'s; Carrie H. Osmond, Bristol; Chatbupuzhankaren Lonappen Ousep, Madras and Edinburgh; Emrys D. Owen, Cardiff; Julian N. J. Pacheco, Madras and London; Louise O. Paterson, Royal Free; Reginald T. Payne, St. Bart.'s; John Pearce, Westminster;

Florence M. Pearson, Royal Free and St. Mary's; Gerard G. Penman, Cambridge and St. Thomas's; Richard P. Perera, Ceylon and London; Alan C. T. Perkins, King's Coll.; Leslie P. Phillips, Charing Cross; Jeffrey W. Poole, St. Bart.'s; Thomas H. I. Potts, Sheffield and St. Mary's; Abraham T. W. Powell, Guy's; Chernagiri Krishnaswami Rau, Madras and Middlesex; Leslie Reuvid, Univ. Coll.; Esther M. E. E. Rickard, Royal Free; Ronald Riley, Cambridge and St. Mary's; John Roberts, Liverpool; Morris Robinson, Univ. Coll.; Thomas E. Ryves, Oxford and St. Bart.'s; Lewis H. Savin, King's Coll.; James M. Schofield, St. Mary's; Harry Seelenfreund, Guy's; Wilfrid P. H. Sheldon, King's Coll.; Ronald W. Smith and Arthur J. Smyth, Cambridge and St. George's; Francis A. R. Stammers, Birmingham; Doris M. Stone, Royal Free; Robert V. Storer, Adelaide and St. Bart.'s; George R. M. Swan, St. Thomas's; Ronald G. Tame and Harry C. C. Taylor, Guy's; Hugh A. Thomas, Liverpool; Thomas B. Thomas, St. Bart.'s; Guy L. Thompson, Cambridge and London; John H. Thompson, Univ. Coll.; George K. Thornton, Cambridge and St. George's; Percy Thwaites, St. Bart.'s; Doris Todd, Royal Free and St. Mary's; Norman C. Tughan, Univ. Coll.; Frank S. Vaughan, Birmingham and London; Arnold L. Walker, Cambridge and Middlesex; Edward G. L. Walker, St. Thomas's; Hygeia L. J. Wallace, Royal Free and Charing Cross; M. H. Webb-Peploe, Cambridge and St. Thomas's; Ethel Whitby, King's Coll.; Norman L. White, Cambridge and Univ. Coll.; Joan F. Whitelock, Univ. Coll.; Alan K. Wiggins, Middlesex; Ernest G. Wilkinson, Birmingham; Hubert C. M. Williams, St. Bart.'s; Ronald E. Wilson, Cambridge and London; Robert K. Wilson, London; Ioos E. Wolf, Zurich; Edith V. Wood, London; Eric Wornum, Guy's; James T. Wybourn, St. Mary's; Harry D. Wyse, Guy's; Mildred M. E. Yate, Royal Free; Bhaskar Balvantrao Yodh, Bombay and London; Joyce P. Yeoman, Royal Free and St. Mary's; Bishai Zeitoun, Assiut and King's Coll.; and Louis S. V. Zinober, Cape and London.

Diplomas in Tropical Medicine and Hygiene were conferred upon the following 16 candidates:—

Justin W. F. Albuquerque, Alec H. Baldwin, John Donald, Ganesh Venkatrao Gollerkeri, Arthur J. Keevill, Allan N. Kingsbury, Frank McCallum, Colin McIver, Emilio J. Pampana, Edwin Peterson, William J. E. Phillips, John L. Rebello, Anis Salama, Narinjan Singh Sethi, William H. Simmons, and Douglas J. Valentine.

Diplomas in Ophthalmic Medicine and Surgery were conferred upon the following 11 candidates:—

Monty Baranov, Thomas Butler, Richard Colley, Thomas Colley, Mahmoud A. M. El-Kattan, James G. F. Heal, Philip C. Livingstone, Brenda A. Mitchell, Zelman Schwartz, Sundar Das Sondhi, and Nand Lal Varma.

Diplomas in Public Health were conferred upon the following 19 candidates:—

Phanindra Nath Basu, William T. G. Boul, Lancelot G. Bourdillon, Frank A. J. Brodziak, Maude C. Cairney, Alan W. Carleton, Alan A. Cockayne, Katherine M. L. Gamgee, Edward Hesterlow, Neville H. Linzee, Muriel J. Lough, Donald W. McKay, Joseph L. Pawan, Sigrid L. S. Pearson, George L. Ranking, Harnath Singh, Gerald M. J. Slot, John Sullivan, and Mukund Lal Talwar.

Diplomas in Psychological Medicine were conferred upon the following 8 candidates:—

Yousif Abul-Nasr Barrada, Thomas M. Davie, Thomas L. Edwards, Mohamed Kamil El-Kholy, Frederick R. Martin, Eveleen B. G. Rivington, George W. Shore, and Peter M. Turnbull.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—E. F. Johnson, St. George's Hosp.; W. M. Jones, St. Bart.'s Hosp.; I. Lipman, Westminster Hosp.; W. R. H. Pooler, Cambridge and St. Mary's Hosp.; and A. J. Vickery, St. Mary's Hosp.

Medicine.—W. B. Arnold, St. George's Hosp.; C. M. John, Madras and Royal Free Hosp.; E. F. Johnson, St. George's Hosp.; I. Lipman, Westminster Hosp.; M. S. Mahmud (Section I.), St. Mary's Hosp.; and S. Thompson, Leeds.

Forensic Medicine.—W. E. Farnham, Birmingham; A. Gullertein, London Hosp.; E. F. Johnson, St. George's Hosp.; and H. Morris, St. Bart.'s Hosp.

Midwifery.—R. Caplan, Glasgow; J. B. Couche, Toronto University; W. E. Farnham, Birmingham; E. F. Johnson, St. George's Hosp.; J. Herbert, Guy's Hosp.; N. Howard, Liverpool; and R. C. Pratt, Birmingham.

The Diploma of the Society was granted to the following candidates entitling them to practise medicine, surgery, and midwifery: W. E. Farnham, A. Gullertein, N. Howard, C. M. John, E. F. Johnson, and I. Lipman.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.—At a meeting of the College held on July 25th the following candidates, having passed the requisite examinations, were admitted Fellows:—

Tajammul Ahmed, Robert C. Begg, William E. R. Coad, Arthur Denham-White, Matthew J. Gibson, Chapple Gill-Carey, Harry M. Godfrey, Alfred W. Harley, Frank Harvey, Arthur T. Hawley, Nicholas E. Kendall, John S. Lloyd, Donald M. MacLeod, Gladys H. Marchant, Leon D. Mercer.

The following were admitted Licentiates:—

Dwijendra Nath Bhaduri and Hubert Collin van Dort.

The following candidates have passed the Final Dental Examination, and have been granted the diploma of L.D.S. R.C.S. Edin.:—

William Guild, Robert C. Cook, Jacobus M. Moll, Henry F. Skinner, Thomas T. Littlefair, William F. D. Grant, Robert W. Thackwray, James B. Cowie, Ian D. J. Smith, George M. Rose, Hector G. Robb, Alexander W. Seaton, David R. Paterson, Alexander Phillips, Walter Wyatt, Douglas M. Beaton, Thomas E. Mathias, John Ross, Francis G. Reid, and William A. Welsh.

The following passed in the subjects of pathology, medicine, and surgery:—

Stuart J. Beaton, John Dewar, George M. Brigg, Bernard S. Reynolds, Agnes M. E. Wilson, Kathleen M. Scott, Frank W. Walmsley, Alexander N. Wight, Robert Lauchlan, and Lourens W. Ackermann.

The following passed in the subjects of medicine and surgery:—

James Brydone, Lesslie Macduff, Charles E. Atkinson, and Nico H. Bartmann.

SMALL-POX IN ENGLAND AND WALES.—The epidemic has apparently reached its fastigium. During the week ending July 21st only 116 new cases of small-pox (with one death) were notified in England and Wales, as against 148 (with one death) in the previous week. The distribution of these 116 cases was as follows: Derbyshire 5 (Alfreton 1, Long Eaton 4); Gloucestershire 65 (Gloucester 57 "including 11 cases notified as chicken-pox but rediagnosed as small-pox," East Dean R.D. 6, Gloucester R.D. 1, Stroud R.D. 1); Lincoln 1 (Isle of Axholme R.D.); Notts 17 (Nottingham 1, Kirkby-in-Ashfield 4, Mansfield Woodhouse 4, Warsop 8); Somerset 1 (Langport R.D.); Wilts 4 (Swindon); Yorks North Riding 2 (Middlesbrough); Yorks West Riding 20 (Bentley-with-Arksey 9, Doncaster R.D. 11); Port of Plymouth 1.

THE VETERINARY PROFESSION AND PUBLIC HEALTH IN IRELAND.—Recently a deputation from the veterinary profession of the Free State interviewed the Minister for Agriculture and urged him to reorganise the public veterinary service of the country, with a view to safeguarding the health of the public and of live stock. The deputation suggested a thorough inspection of dairy cows, cattle marts, and abattoirs so as to prevent the transmission of communicative diseases and to secure a supply of sound animal products and the better control of contagious diseases of animals, particularly those transmissible to man. They urged strongly that there should be provision made for research into obscure diseases of animals, and drew attention to the importance, from the economic point of view, of being able to give Irish cattle a clean bill of health. The Minister, in reply, expressed his appreciation of the draft scheme submitted to him, and his willingness to do all he could to put it into effect. Our Irish correspondent adds: It is encouraging to see the veterinary and medical professions moving on parallel lines in the promotion of public health.

METROPOLITAN ASYLUMS BOARD.—A course of instruction in the diagnosis and treatment of fevers will be held twice weekly at each of the undermentioned hospitals from October to December: Eastern Hospital, Homerton-grove, Homerton, E. 9; North-Eastern Hospital, St. Ann's-road, Tottenham, N. 15; North-Western Hospital, Lawn-road, Hampstead, N.W. 3; Western Hospital, Seagrave-road, Fulham, S.W. 6; South-Western Hospital, Landor-road, Stockwell, S.W. 9; Grove Hospital, Tooting-grove, Tooting Graveney, S.W. 17; Park Hospital, Hither Green, Lewisham, S.E. 13. A two months' course will also be held in November and December at the South-Eastern Hospital, Avonley-road, Old Kent-road, S.E. 14. Students who desire to attend a course of instruction must, before attending at the hospital, bring between 11 A.M. and 4 P.M. on any week-day (except Saturday) or send by post to the Clerk to the Metropolitan Asylums Board, Victoria Embankment, E.C. 4: (1) Authority from the Dean of the Medical School. (2) Fee, £3 3s. for two months' course or £4 4s. for three months' course; cheques to be made payable to "The Metropolitan Asylums Board." (The student must definitely ascertain before taking out his course whether he requires a two or three months' course. In the event of his taking out a three months' course, the extra £1 1s. will not be refunded to him, if he finds subsequently that a two months' course only is required.) (3) Full name and address and name of medical school. (4) The names of at least two of the above hospitals, arranged in the order in which the student would prefer to attend, in case the classes at any of the hospitals should be already full. A course of lectures and demonstrations in hospital administration will be given from October to December at the North-Western Hospital. Fee for the course, £3 3s.; cheques should be made payable to the "Metropolitan Asylums Board." Medical men desiring to attend are required before attending at the hospital to pay the above mentioned fee to the clerk to the Metropolitan Asylums Board, Victoria Embankment, E.C. 4, giving full name and address.

ROCKEFELLER MEDICAL FELLOWSHIPS. — The Medical Research Council announces the award of Rockefeller Medical Fellowships, tenable in the United States of America during the academic year 1923–24, to the following:—

John Crighton Bramwell, M.D. Camb., M.R.C.P., Medical Registrar and Registrar to the Cardiographic Department, Manchester Royal Infirmary.

Norman McOmish Dott, M.B., Ch.B. Edin., F.R.C.S. Edin., Assistant in the Physiological Department, University of Edinburgh.

Helen Ingleby, M.B., B.S. Lond., M.R.C.P., Assistant Physician, Victoria Hospital for Children and South London Hospital for Women.

Hugh Kingsley Ward, M.B. Sydney, D.P.H. Oxf., Member of the Scientific Staff of the Medical Research Council and working in the Department of Pathology, University of Oxford.

It is understood that further awards may be made during the coming academic year.

ASSOCIATION OF CERTIFICATED BLIND MASSEURS.—The fifth annual general meeting of this Association was held on July 19th in the Armitage Hall of the National Institute for the Blind, Great Portland-street, London, W., when Sir Robert Jones, the President of the Association, who was supported by Dr. C. Mansell Moullin, Mr. Harry Platt, and Mr. A. H. Tubby, drew the attention of the audience to the excellent report of the year's work.

IRISH HOSPITALS AND LOTTERIES.—The Committee of Dail Earann, appointed to report on the Hospital Sweepstakes Bill, reported to the Dail last week. It suggested the conditions under which it should be legal to promote lotteries on behalf of hospitals in the Free State. During the debate on the report the House was counted out. There is little prospect of the Bill going any further in the life of the present Parliament.

THE LATE DR. W. A. WALKER.—William Abraham Walker, of Southwell, Notts, who died recently at the age of 78, became M.R.C.S. in 1867, graduating M.B., C.M. Aberd. in 1868, and M.D. in 1880. At one time surgeon-major 3rd Derbyshire Regiment and a keen rider to hounds, Dr. Walker had practised little for several years; his loss will be felt by a wide circle of friends.

PUBLIC HEALTH IN SOVIET RUSSIA.—On July 21st Russia celebrated the five years' anniversary of the Commissariat of Public Health when special sessions and conferences were arranged in illustration of medical investigations and medical work in Soviet Russia. The Red Cross Society of Russia states that a special illustrated magazine will be issued under the title, "Five Years of Soviet Medicine" and pamphlets describing the work of the Commissariat in detail and the part played by Russian doctors during the five years are also to be published.

Messrs. Longmans, Green, and Co. announce that the new edition of Sir Edward Thorpe's "Dictionary of Applied Chemistry" will extend to seven volumes, of which the last volume will be largely occupied by a complete index.—Messrs. W. Heffer and Sons, Ltd. (Cambridge), announce the forthcoming publication of "The Internal Secretion of the Sex Gland," by Prof. A. Lipschütz, Professor of Physiology in the University of Dorpat, Esthonia.

LANCASHIRE COUNTY TUBERCULOSIS COMMITTEE.—The committee has offered to coöperate with the Medical Research Council by affording facilities for experiments with the Dreyer method of treatment. The Council has expressed its thanks for the offer and is considering how best to give effect to it.

MEMORIAL TO THE LATE DR. JOSHUA J. COX.—A new operating theatre in the Cottage Hospital in Buxton is to be erected by the friends and patients of the late Dr. Joshua Cox, who in 1914–17 was Principal Recruiting Medical Officer, Manchester area, and in 1917–18 Commissioner of Medical Services for the N.W. region.

THE LATE DR. F. J. KNOWLES.—The death at St. Helens on July 27th of Frederick Joseph Knowles, M.R.C.S. Eng., has removed a practitioner who was widely known outside his professional circle. Dr. Knowles was born in St. Helens, and after qualifying in 1885 at once began to practise in his native town. He was a keen Volunteer, retiring in 1910 as Lieut.-Colonel R.A.M.C., and for 30 years he was an examiner to the St. John's ambulance. He took an active interest in athletics, swimming, tennis, and cricket, and was a Freemason. His funeral, which was of a military character, was attended by almost every doctor in the district, and the streets of the town were lined by sympathetic crowds.

Parliamentary Intelligence.

HOUSE OF LORDS.

WEDNESDAY, JULY 25TH.

Therapeutic Substances Bill.

The Earl of ONSLOW in moving the second reading of the Therapeutic Substances Bill said there were certain medical preparations mainly used for the purposes of injection the strength and purity of which could be tested by analysis. The most important of these were vaccines and certain arsenical preparations and also animal extracts and insulin. The increasing use of these preparations made it necessary to establish measures for their control and regulation so that the public might be insured against danger or accident from their use, and the Bill proposed to bring these substances under control and to allow them to be manufactured in this country only under licence. The conditions of the licence were to be laid down by a Committee which would consist of the Ministers in charge of the Health Departments in this country, in Scotland, and in Northern Ireland, and they would be assisted by an advisory committee. This committee would make regulations to deal with the strength and the tests of the preparations, and they would vary the list in the schedule as scientific development dictated. The testing work would be done by the Medical Research Council so that there would be no extra expense to the Exchequer. Similar provision was made for imported substances. They would only be imported by holders of licences, and when imported they would be subject to the same tests as articles manufactured in this country. The Bill did not interfere with doctors in any way, for it did not apply to a drug prepared by a registered medical practitioner for his own patients or those of another doctor. Foreign countries for the most part had this control, or some similar form of control. The Government did not think that it ought to be possible for substances which had been rejected as not being up to the standard in the United States to be sold in this country without any penalty, as that might perhaps cause great danger to the British people.

The Bill was read a second time.

THURSDAY, JULY 26TH.

Smoke Abatement Bill.

The Earl of ONSLOW in moving the second reading of the Smoke Abatement Bill explained that it was not proposed to proceed further with the measure this session and the remaining stages would be taken in the autumn. All smoke, and not merely black smoke, was brought within the scope of the Public Health Act, 1875, and included within the term "smoke" were soot, ash, grit, and gritty particles. The fines for breaches of the law were increased, but the maximum penalty was somewhat reduced. Section 334 of the Act of 1875 was extended so as to include the processes of re-heating and annealing, hardening, forging, converting, and carbonising iron and other metals. At the end of five years any of these processes may be excluded from the section by Provisional Order. The Bill gave power to local authorities to fix their own standards for the measurement of black smoke. By Clause 3 the Minister of Health was given power to make orders extending the list of noxious or offensive gases mentioned in Section 27 of the Alkali Works Regulation Act, 1906, and the list of works mentioned in the schedule to the Act.

Viscount NOVAR, Secretary for Scotland, said he hoped to introduce a separate Bill for Scotland in the autumn.

The Bill was read a second time.

National Health Consolidation.

The Earl of ONSLOW moved the second reading of the National Health Insurance Bill, which he said was purely a consolidating Bill.

The Bill was read a second time and referred to a joint committee on consolidation Bills.

MONDAY, JULY 30TH.

Bills Advanced.

The Dentists Bill and the Therapeutic Substances Bill passed through Committee.

HOUSE OF COMMONS.

TUESDAY, JULY 24TH.

Children Employed in Mines.

Mr. DUNNICO asked the Secretary for Mines whether he was aware that boys of 14 years of age were employed in the coal-mines of this country, not only during the day but during the night also; that these boys in some areas commenced their duties between midnight and 3 o'clock in the morning; and whether he was prepared to consider the

advisability of so amending the law as to prevent the continuance of a system that was inimical to the physical and mental welfare of these children.—Lieut.-Colonel LANE-FOX replied: I am aware that boys of 14 may legally be employed at night in coal-mines below ground provided that an interval of ordinarily 15 hours, and in no case less than 13 hours, separates two periods of work. I have received no representations that the law ought to be amended; I will certainly give them my most careful consideration if they are made to me.

Deputy Commissioners of Medical Services.

Mr. PIELOU asked the Minister of Pensions whether he was aware that instructions had been issued to ex-Service Deputy Commissioners of Medical Services terminating their temporary engagements at the end of September, and that non-Service doctors were being retained; and whether, in view of his expressed intention of giving preference in every case to the ex-Service claims, he would arrange that preference was given to ex-Service doctors in this connexion.—Captain CRAIG replied: It has been found necessary to give notice of termination of employment to 36 out of the 88 Deputy Commissioners of Medical Services employed on a six months' contract. Of those now under notice, 30 are ex-Service and six non-Service. There will then remain only four non-Service Deputy Commissioners employed on a six months' contract, and these medical officers are being retained in the interests of the pensioner in consequence of their special experience and qualifications.

Pensioners and Tuberculosis.

Mr. MCENTEE asked the Minister of Pensions what number of men suffering from tuberculosis had applied for pensions and had been refused a pension by his department; the number of men so refused who had appealed against the decision of the Ministry to the appeal tribunal; and the percentage of such appellants who had been granted a pension.—Captain CRAIG replied: I regret that the statistics of the Ministry are not kept in a form that would enable me to answer this question in full, but I may say that during the last 15 months about 2800 claims for pension on account of tuberculosis have been accepted.

WEDNESDAY, JULY 25TH.

Powers of Medical Officers of Health.

Mr. RHYS DAVIES asked the Minister of Health under what Act of Parliament a medical officer of health had power to isolate compulsorily healthy people; and whether he would inquire into the fact that the medical officer of health of Taunton threatened a perfectly healthy family from Gloucester with a period of isolation if they persisted in their refusal to be vaccinated, and in consequence the family returned to Gloucester, where they were examined by the small-pox officials and given a clean bill of health.—Mr. NEVILLE CHAMBERLAIN replied: I am not aware of any Act of Parliament which confers upon a medical officer of health power to order compulsory isolation. As regards the second part of the question I will communicate with the local authority in regard to the action which the medical officer of health is said to have taken in this case.

Health Insurance Contributions.

Major MCKENZIE WOOD asked the Minister of Health what amounts were received in each of the years 1921 and 1922 in England and Scotland, respectively, on account of National Health Insurance contributions; and what was the shortage in each year as compared with the amounts estimated.—Mr. NEVILLE CHAMBERLAIN replied: The amounts of health insurance contributions were approximately as follows: England and Wales, 1921, £22,130,000; 1922, £22,500,000; Scotland, 1921, £2,740,000; 1922, £2,720,000. The shortage of contributions as compared with the amount assumed in the financial basis of the Act—namely, about 48 contributions per insured person per annum—is estimated to be approximately 7 per cent. in England and Wales and 10 per cent. in Scotland.

Cancer Areas.

Mr. ALFRED T. DAVIS asked the Minister of Health whether his department is collecting information with regard to what are termed the cancer areas in this country or on the Continent of Europe; and what were the results, if any.—Mr. NEVILLE CHAMBERLAIN replied: The subject of my hon. friend's question is receiving the attention of the committee which is advising the Ministry on cancer problems, but there are no results which can be published at present.

Birth Control Information.

Mr. BROAD asked the Minister of Health whether his department would raise any objection to birth control information being given at infant welfare centres to married women who desired it by voluntary workers attached to the centres, or otherwise to their being informed, on request, where such information could be obtained.—Mr. NEVILLE CHAMBERLAIN replied: My view is that such information as is referred to should not be given at infant welfare centres, but that women for whom it appears to be needed on medical grounds should be referred to a private practitioner or to a hospital.

Poor-law Authorities and Small-pox.

Mr. ADAMS asked the Minister of Health whether, in view of the fact that public vaccination was controlled by the Poor-law authorities, who had no responsibility in the prevention of small-pox, he would take the necessary steps to transfer their powers in this connexion to the health authorities, who were responsible for the prevention of this disease.—Mr. NEVILLE CHAMBERLAIN replied: This suggestion is under consideration in connexion with the general question of possible amendment of the Vaccination Acts.

Use of Poor-law Hospitals.

Mr. RHYS DAVIES asked the Minister of Health whether, in view of the fact that the voluntary hospitals of the country were crowded and subject to long waiting lists and that a large number of beds were unused in the Poor-law hospitals, he could take some immediate action to remove this anomaly.—Mr. NEVILLE CHAMBERLAIN replied: I do not think I could usefully undertake any general action in the direction suggested, but I should be very glad to consider any proposals which may be put forward by boards of guardians and the authorities of the hospitals for the general use of surplus accommodation in Poor-law infirmaries.

Deaths from Starvation.

Mr. ROBERT RICHARDSON asked the Minister of Health whether he was aware that it was ascertained, by inquests, that in 1921 three persons died of starvation in the unions of Hammersmith, St. Olave, and Bermondsey, in the county of London; whether his department had taken any and, if so, what steps to prevent similar deaths; whether any and, if so, how many deaths in that county in 1922 were found by inquest to have been due to starvation or accelerated by privation; if he could supply particulars as to age, sex, date of inquest, and union concerned; whether any and, if so, what Poor-law officers were examined at the inquest; and whether any of the persons so dying in either year were tramps or homeless.—Mr. NEVILLE CHAMBERLAIN replied: I am aware that three cases of death which occurred in the County of London in 1921 were found by inquest to be due to starvation. The unions concerned were Paddington, Hammersmith, and Bermondsey. In the year 1922 no deaths in the county were found by inquest to have been due to starvation or exposure, and accordingly the third and fourth parts of the question do not arise. The death which occurred in the Hammersmith union in 1921 was that of a homeless man.

Cost of Insulin.

Viscount EDNAM asked the Minister of Health whether he was aware that diabetic sufferers were unable to obtain insulin treatment at a lower cost than 10s. per day, although panel patients under the Insurance Act were obtaining free treatment; and whether he would make arrangements for uninsured persons to obtain this treatment at a lower cost.—Mr. NEVILLE CHAMBERLAIN replied: I am advised that the average cost of insulin is at present about one-third of the figure stated by my noble and gallant friend, though the treatment of exceptionally severe cases such as must go to an institution may cost more. It is within the power of the guardians, on the advice of their medical officer, to pay for the supply of insulin in cases of destitution.

Viscount EDNAM: In view of the importance of this matter has not the time come for the Ministry to control the price?—Mr. CHAMBERLAIN: I do not think so, because the price has been reduced already very materially and I have good hope that it will be still further reduced.—Viscount EDNAM: It is still very high and far above the figure which an ordinary person can afford.

THURSDAY, JULY 26TH.

Ex-Service Men and Medical and Surgical Treatment.

Captain BOWYER asked the Minister of Pensions how many officers and men disabled in the great war had received medical or surgical treatment at the cost of his department.—Major TRYON replied: Approximately 1,500,000 courses of treatment have been provided by my department for the officers and men who were disabled in the great war.

Salford Public Vaccinator and the Regulations.

Mr. TILLETT asked the Minister of Health whether his attention had been called to the fact that the public vaccinator of Salford insisted on vaccinating the child of Mr. R. Headon, of 79, Nora-street, Lower Broughton, in spite of the fact that the period during which a conscientious objection to vaccination might be lodged had not expired, the child having been born on March 10th and vaccination taking place on April 19th; and what steps he proposed taking to prevent this abuse of the regulations.—Lord EUSTACE PERCY replied: My right hon. friend has communicated

with the guardians in reference to this case, and I am informed that the public vaccinator called at the house of Mr. Headon on April 19th and offered to vaccinate the child; that the mother did not raise any objection or demur in any way; and that she has confirmed this statement but added that she thought vaccination was compulsory. There is no evidence that the public vaccinator insisted on vaccinating the child without the parent's consent, or of any abuse of the regulations which calls for any special action on the part of the Minister. I may add that the exemption certificate of conscientious objection is dated 25 days after the child had been vaccinated.

Cream, Milk, and Cheese Standards.

Mr. HURD asked the Minister of Health what was the present position of the movement in his department to carry out the recommendations of the departmental committee in favour of standards of quality for cream, dried milk, and cheese.—Lord E. PERCY replied: The draft regulations dealing with dried milk have now been published in accordance with the requirements of the Rules Publication Act, 1893. As regards cream and cheese I would refer my hon. friend to the answer which my right hon. friend gave on this subject on the 11th inst.

FRIDAY, JULY 27TH.

Deaths from Small-pox.

Mr. RHYS DAVIES asked the Minister of Health how many of the small-pox deaths registered during 1922 were classified as vaccinated, how many as unvaccinated, and how many as doubtful as regards vaccination; and how many of these deaths occurred in children under 5 years of age.—Mr. NEVILLE CHAMBERLAIN replied: Of the 27 deaths attributed to small-pox during 1922, 12 occurred in persons who had been vaccinated at some time in their lives. Ten among unvaccinated persons, three among those who were said to have been vaccinated but who showed no signs of vaccination, and two among those previously unvaccinated who were vaccinated during the incubation period of small-pox. There were four deaths among children under 5 years of age; of these three were unvaccinated, and one was vaccinated during the incubation period of small-pox, but had not previously been vaccinated.

MONDAY, JULY 30TH.

Medical Services for Kenya Natives.

In reply to Mr. MOREL, who asked the Under-Secretary for the Colonies whether, in view of the recent declaration of H.M. Government that the administration of the Colony of Kenya should be based upon the principle of trusteeship for the native population, he would take steps to secure that the principle be adopted that at least one-fifth of the direct taxes paid by the natives should be returned to them in technical education, medical service, and agricultural instruction.—Mr. ORMSBY-GORE replied: I should be glad if, consistently with the general financial position of the Colony, a larger proportion of revenue could be devoted to services for the direct benefit of the native. The matter will not be lost sight of, but I do not think that any fixed percentage can be laid down.

Conscientious Objection to Vaccination.

Mr. TREVELYAN THOMSON asked the Minister of Health whether, in view of the issue of Circular No. 424, dated July 23rd, to boards of guardians, a statutory declaration of conscientious objection to vaccination in the form set out in the Schedule to the Vaccination Act, 1907, would be accepted by vaccination officers in place of the new form to be issued by the Ministry.—Mr. NEVILLE CHAMBERLAIN replied: The form of statutory declaration of conscientious objection to vaccination which will be issued by my department to vaccination officers will be the form set out in the Schedule to the Vaccination Act, 1907. The Act provides that these statutory declarations must be made in that form or in a form to the like effect.

Mr. LANSBURY asked the Minister of Health whether he would explain why he had issued an order requiring a person making a statutory declaration of conscientious objection to vaccination to make such declaration only on a form supplied by the vaccination officer, in view of the provision in the Vaccination Act, 1907, Section 3, permitting the use of the form set out in the Schedule to the Act or a form to the like effect.—Mr. NEVILLE CHAMBERLAIN: The hon. Member appears to be under some misapprehension. The Vaccination Order recently issued states that these declarations must be made in a form which may be obtained from the vaccination officer or in a form to the like effect. The form issued to vaccination officers will be the form set out in the Schedule to the Vaccination Act, 1907.

Mr. EDWARDS asked the Minister of Health whether he had decided to alter the system of obtaining forms under which exemption from vaccination can be obtained and which has been in force for 15 years; and whether, in view of Section 3 of the Vaccination Act of 1907, he would state his authority for making such order.—Mr. NEVILLE CHAMBERLAIN: The answer to the first part of the question is in the affirmative. As regards the second part, the authority for the Vaccination Order recently made is contained in Section 15 of the Vaccination Act, 1871, and I find nothing in the Act of 1907 which prescribes the manner in which forms for the purpose of statutory declarations under that Act are to be obtained.

Court of Appeal for Lunatics.

Mr. ROBERT RICHARDSON asked the Minister of Health if he was aware that the recent transfer of the lunacy department by Order in Council from the Home Office to his department had had the result of throwing into abeyance many matters connected with legal sanction and the liberty of the individual; and, in view of the fact that the scope of his Ministry did not extend to judicial investigation, would he consider the possibility of instituting a court of appeal for persons unjustifiably confined in asylums.—Mr. NEVILLE CHAMBERLAIN replied: The transfer of certain powers under the Lunacy Acts to the Ministry of Health by Order in Council under the Ministry of Health Act has not had the result suggested by the hon. Member; the second part of the question does not, therefore, arise.

Nurses' Registration Rules.

Dr. CHAPPLE asked the Minister of Health whether he was aware that, under section 3 (2) (*c*) of the Nurses' Registration Act, 1919, rules were to be made enabling persons who had been bona fide engaged in practice as nurses under certain conditions to be admitted to the register, providing application was made within a period of two years after the date on which a rule first came into operation, and that a rule first came into operation on July 7th, 1923; could he now say whether persons to whom this rule applied might, if otherwise qualified, be admitted to the register; and would he say whether he had satisfied himself that the General Nursing Council was correctly interpreting the Act and the new rule.—Mr. NEVILLE CHAMBERLAIN replied: The hon. Member has not quoted the Act correctly. The wording of the section in question is "the date on which the rules to be made under the provisions of this paragraph first come into operation," and I am advised that the effect of the provision is to allow a period of two years from the date when the first body of rules came into operation. This date was the 14th July, 1921, and the two years' period having now expired the General Nursing Council have no power to admit further applications for registration as existing nurses.

Medical Women and Nurses in Fiji.

Mrs. WINTRINGHAM asked the Under-Secretary of State for the Colonies whether he could state the present numbers of men, women, and children respectively in the Indian community in Fiji; whether there were any fully trained medical women, nurses, or midwives in the islands and, if so, of what nationality; and what arrangements were made by the Fiji Government for the medical treatment of the Indians.—Mr. ORMSBY-GORE replied: The census of 1921 showed 23,407 Indians under 15 years of age, 24,886 men and 12,326 women. There were two European women medical practitioners (one of whom was presumably the Government medical officer whose agreement recently expired), and women nurses numbering 33 Europeans, 7 half-castes, 31 Fijians (not including those in the native villages), and 5 Indians. No distinction between races is made by the Government medical and hospital service, which cost in 1922 £51,319, not including buildings; that is, over 11 per cent. of the revenue.

Prison Governors as Medical Officers.

Mr. HAYES asked the Secretary of State for the Home Department the number of prison governors who were authorised to act also as medical officers; and whether he proposed to make any change in this practice.—Mr. BRIDGEMAN replied: No change in the present practice is contemplated. There is only one governor holding the necessary qualifications to act as a medical officer.

TUESDAY, JULY 31ST.

Maternity Benefit.

Mr. NEIL MACLEAN asked the Under-Secretary to the Scottish Board of Health whether it was the intention of the Scottish Board of Health to publish the Report of the Joint Committee set up in 1920, and composed of representatives from the Consultative Committee on Local Health Administration and General Health Questions and the Consultative Committee on National Health Insurance (Approved Societies' Work) to consider and report on the interrelation of maternity benefit under the Insurance Act and the maternity and child welfare schemes of local authorities; and, if so, when.—Captain ELLIOT replied: It is not proposed to publish this report.

Miners' Nystagmus.

Mr. PALING asked the Secretary for Mines whether any statistics were yet available showing the number of cases of miners' nystagmus at pits where electric lamps were used, as compared with pits where oil lamps were used.—Lieut.-Colonel LANE-FOX replied: No, Sir, as I informed the hon. Member on March 13th, such statistics would be of little value in themselves owing to the number of factors involved.

Penrhiewtyn Hospital.

Mr. WILLIAM JENKINS asked the Minister of Pensions if he contemplated vacating the hospital at Penrhiewtyn, Neath; whether he was aware that there was considerable resentment in the area at the idea of its being removed; would he state the number of wounded ex-Service men now at the hospital, the number attending there for treatment, and the extent of the area it covered, and, before any step was taken, would he cause full inquiries to be made and give an opportunity to representatives of the wounded to be heard.—Captain CRAIG replied: It is proposed to vacate the hospital premises at Neath in the autumn, when a more suitable institution at Chepstow will be available. My right hon. friend is not aware of any objection to this change; on the contrary he has reason to believe that the ex-Service men appreciate that it is to their advantage, in view of the better facilities for treatment which the new institution will afford. There are at present 169 in-patients and 78 out-patients at Neath Hospital.

Deaths from Cow-pox.

Mr. BROMFIELD asked the Minister of Health what were the ages of the seven persons registered in the year 1922 as dying from cow-pox and other effects of vaccination.—Mr. NEVILLE CHAMBERLAIN replied: The ages were as follows: One aged 21 days; two aged 4 months; one aged 5 months; one aged 6 months; one aged 18 months, and one aged 55 years.

Appointments.

BERRY, R. B., M.D., Ch.B. Vict., D.P.H., has been appointed Medical Officer of Health for Gloucester.

GOOD, J. V., L.R.C.P., M.R.C.S., House Surgeon, Tiverton Hospital.

JONES, J. W., Certifying Surgeon under the Factory and Workshop Acts for Bridgend.

RODGERS, F. M., M.D. Manch., D.P.H., Medical Superintendent of the Lancashire County Mental Hospital, Prestwich.

STENHOUSE, G. B., M.B., B.Ch. Vict., House Surgeon to Ancoats Hospital, Manchester.

UNDERWOOD, J., B.Sc. Lond., M.R.C.S., L.R.C.S. Lond., M.B., B.S. Lond., D.P.H., Permanent Assistant Medical Officer, and DALBY, MARJORIE, M.B., B.S. Lond., D.P.H., Temporary Assistant Medical Officer for Willesden.

Royal Infirmary, Sunderland: RUSSELL, J. N., M.B., Ch.B., House Surgeon; ALLICE, MARGARET, M.B., Ch.B. Edin., Junior Resident Medical Officer, Children's Hospital in connexion with the Royal Infirmary.

Surgeons under the Factory and Workshop Acts: ROBERTSON, D. G., M.B., Ch.B. Edin. (Polmont); BIRD, J. W., M.R.C.S., L.R.C.P. Lond. (Egham); and MORRIS, G. E. V., M.R.C.S., L.R.C.P. Lond. (Wednesbury).

Vacancies.

For further information refer to the advertisement columns.

Bath, Royal Mineral Water Hospital.—Res. M.O. £200.

Birmingham, City Hospital, Little Bromwich.—Senior Asst. M.O. £350.

Birkenhead Borough Hospital.—Hon. Skin Specialist.

Birmingham, Queen's Hospital.—Third P. to Out-patients. £50.

Birmingham, West Heath Sanatorium, &c.—Med. Supt. £650.

Bolingbroke Hospital, Wandsworth Common, S.W.—H.S. £120.

Bristol, Cossham Memorial Hospital, Kingswood.—H.S. £120.

Cambridge, Addenbrooke's Hospital.—Cas. O. and Res. Anæsth. £130.

Carmarthenshire Education Committee.—Chief School M.O. £700.

Central London Throat, Nose, and Ear Hospital, Gray's Inn-road, W.C.—Res. H.S. £75.

Chester City and County.—Asst. M.O.H. £500.

Croydon County Borough.—Deputy M.O.H. and School M.O. £780.

Cumberland County Council.—Asst. County M.O.H. £500.

Doncaster Royal Infirmary and Dispensary.—Junior H.S. £150.

East African Medical Service.—M.O. £600.

Eastbourne Royal Eye Hospital.—Hon. S. and Hon. Anæsth.

Exeter, Royal Devon and Exeter Hospital.—H.P. £150.

Exminster, Devon Mental Hospital.—Third Asst. M.O. £300.

Federated Malay States, Central Mental Hospital.—Asst. Med. Supt. £616.

Freemasons Hospital and Nursing Home, 237, Fulham-road, Chelsea, S.W.—Res. M.O. £250.

Inverness, Northern Infirmary.—H.S. £120.

Leeds Public Dispensary.—Sen. Res. M.O. £200.

Leeds University, Dept. of Physics.—Prof. of Phys. Also Lecturer in Phys. £800 and £600 respectively.

Lewes Union.—M.O. for No. 1 District. £60. Also M.O. for Workhouse at Chailey. £100.

Lenham Sanatorium.—Med. Supt. £650.

Liverpool, Royal Southern Hospital.—Two H.P.'s. and Three H.S.'s. Each £100. Also Res. Cas. O. £150.

Manchester, Monsall Fever Hospital.—Jun. Med. Asst. £405 6*s.*

Manchester, St. Mary's Hospitals for Women and Children.—Asst. M.O. £100.

Mid-Wales Counties Mental Hospital, Talgarth, Breconshire.—Med. Supt. £800.

Rotherham Hospital.—Sen. H.S. £260.

Royal Naval Medical Service.—Surgeon Lieutenants.

St. Mark's Hospital for Cancer, Fistula, &c.—H.S. £200.

Staffordshire Education Committee.—Two Asst. School Med. Inspectors. £600.

West African Medical Service.—M.O. £660.

Weston-super-Mare Hospital.—H.S. £150.

The Chief Inspector of Factories, Home Office, London, S.W., announces the following vacant appointments: Uttoxeter, Staffs, and Crook, Durham.

Births, Marriages, and Deaths.

BIRTHS.

BESWICK.—On July 25th, at Mill Way, Mill Hill, the wife of Wilfrid Beswick, M.D., of a son.

HAMILL.—On July 24th, at St. John's Wood, N.W., the wife of Philip Hamill, M.D., D.Sc., F.R.C.P., of a daughter.

SPRIGGE.—On July 29th, at 4, Limefield-terrace, Levenshulme, Manchester, to Katriona (née Gordon-Brown), wife of Cecil Squire Sprigge—a son.

MARRIAGES.

DIBLE—ALLEN.—On July 25th, at St. Martyn's Church, Marple, Cheshire, James Henry Dible, M.B., M.R.C.P., to Marjorie Yeo, younger daughter of Mr. and Mrs. S. J. Allen, of Carlingford, Strines, Cheshire.

DEATHS.

MURRAY.—On July 28th, after an operation, Flora Murray, C.B.E., M.D., D.P.H., of Harley-street, W., and Paul End, Penn, Bucks, aged 54.

PETHYBRIDGE.—On June 27th, 1923, at 11, Whitefield-terrace, Plymouth, Walter Ley Pethybridge, B.Sc., M.D., aged 54.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY, August 6th.—College closed.

TUESDAY.—10.30 A.M., Dr. Paterson: Medical Wards. 12 noon, Dr. Burrell: Chest Cases. 2 P.M., Mr. Sinclair: Surgical Out-patients.

WEDNESDAY.—10 A.M., Dr. Saunders: Medical Diseases of Children. 2 P.M., Mr. Gibb: Eye Dept. 2.30 P.M., Mr. Donald Armour: Surgical Wards.

THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Dept. 3 P.M., Dr. Scott Pinchin: Medical Out-patients.

FRIDAY.—10 A.M., Mr. Dudley Buxton: Dental Dept. 2 P.M., Dr. Burrell: Medical Out-patients. 2 P.M., Mr. Banks-Davis: Throat, Nose and Ear Dept.

SATURDAY.—10 A.M., Dr. Saunders: Medical Diseases of Children. 10 A.M., Mr. Banks-Davis: Operations on Throat, Nose and Ear.

Daily, 10 A.M. to 6 P.M., Saturdays, 10 A.M. to 1 P.M., In-patients, Out-patients, Operations, Special Departments.

INDEX TO "THE LANCET," VOL. I., 1923.

THE Index and Title-page to Vol. I., 1923, which was completed with the issue of June 30th, is now ready. A copy will be sent gratis to subscribers on receipt of a post-card addressed to the Manager of THE LANCET, 1, Bedford-street, Strand, W.C. 2.

THE LANCET: SUBSCRIPTION RATES.

INLAND	One Year	£2 2 0
	Six Months	1 1 0
	Three Months	0 10 6
ABROAD	One Year	2 10 0
	Six Months	1 5 0
	Three Months	0 12 6

Notes, Comments, and Abstracts.

TYPHUS FEVER EPIDEMIC AMONG THE GREEK REFUGEES.

BY SIR PATRICK HEHIR, K.C.I.E., C.B., C.M.G., M.D. BRUX., F.R.C.S., F.R.C.P. EDIN.,
MAJOR-GENERAL, I.M.S. (RET.); MEDICAL ADVISER, BRITISH RED CROSS SOCIETY IN GREECE.

(*Concluded from p. 210.*)

Complications.

BRONCHITIS of greater or lesser severity is present in a large proportion of cases. It usually appears early, and if persistent and implicating the bronchioles, is often fatal. Bronchopneumonia is one of the commonest complications, usually affecting the bases of both lungs. Pleurisy is much less frequent, but there are few large typhus wards in which a case may not be found. In one infectious diseases hospital two of these cases were being operated on for effusion during my visit. Diarrhœa, very common in the later stages of the disease, usually begins on the eighth or ninth day, is often difficult to check, and if severe and persistent adds much to the patient's danger. Many medical men in Greece dealing with typhus on a large scale, spoke to me of implication of the heart muscles in the disease; they considered that in most cases there was a certain amount of myocarditis. I saw one case of acute endocarditis as a complication. Cardiac dilatation is likewise often present, and in the acute form is not uncommon as a terminal event in fatal cases. Parotitis is one of the more serious complications; I saw altogether 20 of these cases, as many as three in one ward of 30 patients; in two the swelling was so great and universal in the face and neck that the features were obliterated. In one hospital with 156 cases, there were only three of parotitis, and in another with 86 cases there was none. In the latter, during the early months of the epidemic, there had been altogether 12 cases. Otitis media occurs in a small percentage of cases; it may become chronic. We have seen a few of these distressing middle-ear infections among our refugees who return from the infectious diseases hospitals with a chronic suppurative discharge from one or both ears, the hearing being always defective; when both ears are involved, there is little hearing left. Actual deafness is a marked feature of many cases of typhus during the later stage of the disease; this is quite distinct from the dullness of intellect that exists at this stage. One or more cases of conjunctivitis and keratitis are often met with in typhus hospitals. Using a disinfectant eye-wash every four hours from the time of admission in one hospital stopped this form of complication altogether. Gangrene implicating the toes occasionally occurs; I saw two such cases where amputation was carried out; they recovered. Bedsores are common, especially when nursing is not of a high order.

Mortality.

There seems to be a remarkable difference in the intensity and mortality of typhus in different areas. The average mortality in the infectious diseases hospitals near Athens is roughly 10 per cent.; it is, however, much higher in some towns, such as Corfu, Patras, Volo, &c. It varies greatly at different ages, being very high (50 per cent. in some towns) in refugees of 50 years and over. The high death-rate in the old may be associated with the economic conditions of their life as refugees; I was inclined to believe that with the best nursing and care a fair proportion of these old people would recover. This belief is borne out by the experience of the Salonica Hospital. Among the 32 convalescents I saw in it on May 14th, there were one man of 65, one of 62, one of 57, two of 55, one woman of 61, one of 58, and two of 56. It seems to be largely a question of getting these old people under good nursing and treatment at an early stage of the disease. The mortality is very slight in children; their attacks are comparatively mild. I have been impressed with the higher mortality in women than in men between 20 and 50.

Prognosis.

Many circumstances affect the prognosis, but the main factors are age, sex, and the standard of efficiency in nursing in operation. Many children escape the disease altogether; those attacked usually get it in a comparatively mild, though characteristic form. Adolescents and young men (of whom we have had few) appear to struggle through the disease satisfactorily. We have had a high incidence of attacks amongst old men and women. After the age of 55 their chances of recovery are much reduced. In the Salonica Hospital, with good nursing and treatment, the typhus mortality was only 5·8 per cent., and the complications were fewer and less severe than in other infectious diseases hospitals. Complications are frequent and serious among those who are badly nursed and cared for; the mortality rises with the degree of inefficiency in nursing. In another infectious diseases hospital visited the mortality was only 7 per cent., and the complications, though serious, were less so than in most other hospitals. In two other infectious diseases hospitals the mortality was 11 and 12 per cent. respectively, and the complications formed the worst phase of the disease; in both these hospitals the nursing was defective. In none of these hospitals were there complete arrangements for protection of the sick attendants, nurses, and doctors from infection. Medical men, nurses, and all sick attendants looking after typhus patients should be thoroughly protected from lice by suitable cotton or linen clothing from head to foot before commencing their work daily, and have a bath and a complete change of clothing after finishing their day's work. Even with these precautions infections will occur during an epidemic, but without them infection is inevitable sooner or later.

Treatment.

When typhus is diagnosed the case should be sent to hospital from the refugee camp at once. To this rule we make but few exceptions; there were instances in which members of our staff were attacked and sent to isolation wards of ordinary general hospitals. It was a great concession accorded to us, and none of these cases proved fatal. The refugees were greatly opposed to our sending their infected relatives to infectious diseases hospitals, but this measure is necessary for the safety of the uninfected. Some definite routine plan must be adopted in admitting typhus fever cases into hospital and distributing them in wards. The first requirement is a receiving room to which all patients are primarily brought. Here the hair of the head is rapidly cut off with a machine clipper, the hair of the axillæ and pubes being shaved off and all hair burned. The receiving room should communicate with the room or other area containing the steam-disinfector on the one hand and with the bathroom on the other; the latter should lead to the dressing-room. After removal of the hair the patient is put on a stretcher and conveyed to the room containing the disinfector. Here everything he brings with him is discarded and disinfected. He is next taken to the bathroom and bathed, and then put on a clean stretcher and removed to the dressing-room, where he receives a suit of clean hospital clothes, being then taken to a ward. This routine must be thoroughly carried out if the wards are to be kept free from infected lice. Nothing that the patient brings to hospital should enter the ward. The carrying out of a similar routine in delousing all inmates of refugee camps is of paramount importance. All these arrangements have, of course, to be improvised in dealing with refugees. The most vitally important measure necessary at the present time is the isolation of all cases of typhus to prevent its dissemination. Thoroughly deloused typhus cases are perfectly innocuous to the uninfected, and if delousing arrangements are quite efficient there is no reason for putting them in separate wards. Personally I have seen no infectious diseases hospital in Greece that inspired complete confidence.

Typhus patients should be kept in bed throughout the pyrexial stage of the disease and for at least a week afterwards. They may be dieted on practically anything they can assimilate; the lowered digestive powers indicate the desirability of giving such foods as soups, jellies, macaroni, porridge, fish, eggs, and so forth. The more simple liquids taken—lemonade, soda and milk, weak tea, &c.—the better. Most physicians in Greece are opposed to the use of antipyretic drugs. If the temperature calls for reduction this is readily effected by cold sponging, or, if a decided effect is required, packing in cold wet sheets. There is great temptation to use aspirin or some other antipyretics; it certainly relieves the main symptoms, but it masks the patient's state and eventually depresses him considerably. In the early stage, when sleeplessness and irritability are present, small doses of morphine give satisfactory results; large doses are to be avoided as they also mask the condition and in later stages are altogether too depressing. The morphine may later on be replaced by paraldehyde or sulphonal if it is called for. The most popular stimulant is hypodermic injections of camphor (gr. 2 to 5 in 1 c.cm. of olive oil or in ether put up in ampoules) every four hours; in severe cases with threatened heart failure it is alternated with digitalin or strophanthin. Though little used in this epidemic I am convinced that the careful administration of alcohol (in the form of brandy or whisky) would tide many cases over the critical period of the disease, the ninth to the fourteenth day. It is too expensive for general use in these cases among refugees. Saline infusion subcutaneously is very commonly used and is well spoken of, as much as 1½ to 2 pints being given daily from an early stage. Some cases die of heart failure during canvalescence, owing

it is said, to overstrain of the myocardium, which is seriously involved. This involvement of the heart muscle demands care in convalescence; the only treatment required appears to be a tonic of strychnine, strophanthin or digitalis, and iron, easily assimilable nourishing food, and gentle exercise. Normally cases are kept in hospital 14 to 21 days from the first day of apyrexia. With great pressure on hospital accommodation the cases are sometimes discharged at the end of the first week; as they are then (if they again become lousy) for some days infectious to those around them, their freedom from lice must be assured. Eye affections, especially conjunctivitis and keratitis, may to a large extent be prevented by the use of suitable collyria from the beginning; parotitis, otitis media, and possibly pulmonary complications may be reduced by the use of gargles, mouth-washes, and swabbing the throat with appropriate antiseptics.

The treatment for typhus adopted in the infectious diseases hospital at Salonica is as follows. *Diet.*—Milk 44 ounces (1 oke) daily, meat soup twice a day, egg-flip twice, lait caillée (yaourt) once a day, sour milk and lemonade ad lib. This is the adult diet, modified as required. *Drugs.*—The following are most generally employed: Camphor (gr. 2 to 5) in olive oil (made up in ampoules) every four hours or so subcutaneously after the first week; adrenalin one ampoule daily; spartein and strychnine on alternate days; caffein once a day. When necessary, either sulphonal or paraldehyde is used to induce sleep. Occasionally during the first week small doses of morphine are given to calm the patient. Purgatives are not given; constipation is the rule, and it is relieved by simple enemata. I was surprised to find so little serious diarrhœa and rectal incontinence in the later stages of serious cases as compared with those in other hospitals, even our own. For headache and noisy delirium ice is applied to the head; for high temperature cold sponging, and where hyperpyrexia threatens cold sheet packing is employed. The eyes are washed with boric acid lotion, the mouth with an antiseptic, and the throat swabbed every four hours; a gargle and mouth-wash are given if the patient can use them. Since this latter routine has been adopted complications have greatly decreased. Saline solution is infused into the subcutaneous tissues twice a day or so, 12 ounces at a time. Serum treatment is not adopted. A trial was made of defibrinated typhus blood incubated for three days at 37° C. with ox-gall, and then heated to 60° C. for two hours. The dose given was 2 c.cm. once a day. It was used in 50 cases with no obvious good effects and then abandoned. Massage is looked upon as a valuable accessory to the treatment and is carried out in every case twice a day.

Very little is done in this epidemic in connexion with specific treatment by the use of sera of typhus convalescents.

Prophylactic Inoculations.

A lasting immunity to typhus is established by a previous attack. In Asia Minor and the Levant generally typhus is almost endemic, and it is probable that many of those refugees who have escaped in the present epidemic have acquired immunity by a previous attack in childhood. It is possible, also, that an immunity of limited duration may be acquired by the inoculation of the virus of the disease obtained from typhus cases in the early stage of the disease. As a substitute for a prophylactic vaccine the blood of typhus fever cases has been inoculated and the virus thus introduced in a living state. The killed virus is used here.

Inoculation against typhus is being adopted in Greece; it is at present experimental, and, of course, voluntary. I was inoculated a few days after my arrival in Greece and now all employed on British Red Cross work have been done. There is absolutely no reaction. Dr. Georges Blanc, director of the Institut Pasteur Hellénique, who is on special duty in connexion with this work, tells me that he has not heard of any inoculated person acquiring the disease, but expresses no opinion regarding its prophylactic effects at present. I understand that if favourable reports regarding its value are forthcoming in due course, the Greek Government propose making inoculation compulsory among refugees occupying infected areas.

Prevention.

The carrying out of preventive measures in a refugee camp is comparable with nothing met with in ordinary civil or military life in the United Kingdom; the closest approach to it I know of is work among famine-stricken areas in India. So far as the area allotted to the British Red Cross is concerned, the typhus epidemic is now well under control, and it is anticipated that the disease will die out within the next four or five weeks. It is beyond the power of human effort completely to eradicate it under existing circumstances. In our jurisdiction we have had only three cases during the last 19 days. I confess that initially I had hoped for more radical results, but I had not then had my later disappointing experience in all work where Greek refugees form part of the organisation. With regard to our particular charge in and near Athens I recently wrote to the British Red Cross in London that throughout March much energy was concentrated in endeavouring to reduce, if not eradicate, the typhus epidemic among our refugees. It was recognised that while the typhus outbreak lasted there must be a great deal of apprehension among the refugees themselves and a certain amount of risk to the staff in their daily work. A sight deserving of permanent record is that of the British nursing sisters examining the heads and clothes of the refugees for lice and nits, and coercing the hosts of these insects against their will to be de-verminised in the bathrooms. All men's and boys' heads were shaved, and all girls up to the age of 14 had their hair bobbed. All cases of actual typhus, of course, had their heads shaved. These were severe measures and led to some mutinous display among the refugees, but this exhausted itself when it was recognised that these were compulsory measures adopted for their personal safety. Our nursing sisters also used on the heads of the refugees in camp the mixture of equal parts of kerosene and olive oil we employ to free nits from hair, and they distributed N.C.I. powder (naphthalene 96 parts, creosote 2 parts, iodoform 2 parts), which was in little bags to be worn continuously for a week, when a fresh bag is issued. The idea is that the heat of the body helps to vapourise the ingredients and creates a louse-destroying atmosphere next the skin and clothes.

I believe it to be well worth while in every camp to endeavour to educate the people in regard to the nature of typhus and the principles that underlie its eradication and prevention. We placarded leaflets in this connexion and also had them read out periodically for the benefit of the illiterate. We also posted up such short notices as: "Lice cause typhus fever"; "It is disgraceful to have lice in the head," and so on.

The specific measures now indicated appear to be—(1) dispersion of refugees from overcrowded towns to rural areas as much as possible; (2) an increased supply in many towns of water which should be available to, or at least be within easy reach of, every house. In some camps the water-supply is decidedly defective, and bathing arrangements, steam-disinfection of clothing and bedding, and ordinary laundry-work are seriously interfered with. The Greek administration is endeavouring in all possible ways to remove this difficulty.

Every effort to quarantine contacts has failed, which, all things considered, was to be expected. All we want is that the contact should be definitely watched for 21 days, the time laid down as the maximum incubation period. We endeavoured, as far as was possible, to render these certificated people free from lice; we felt that if thus free they could not communicate typhus, even if they acquired it themselves in the meantime. The quarantining of contacts in a small country which contains over a million and a quarter of refugees, many thousands of whom are contacts and are either in search of work or have daily to pass in and out of the camps to and from their work, is an impossibility. We hope that during the summer the epidemic will come naturally to an end by cessation of the multiplication of lice in unfavourable meteorological conditions, and that by the beginning of the next typhus season the economic and other conditions at present antagonistic to preventive work will have altered for the better.

PREVENTION OF DECAY OF TEETH.

A LEAFLET for the use of parents, dealing with the causes of decay in teeth and its prevention, has just been issued with the approval of the Council of the Society of Medical Officers of Health. The leaflet reads as follows:—

Decay of teeth is caused by the fermentation of food that sticks on or between the teeth after meals. Acid is formed from the food, and this acid eats a hole into the teeth. It is only the "starchy" and "sugary" foods (see below) that form acid in the mouth.

It is most important that the jaws should be well grown and the teeth regular. This is brought about by breathing through the nose from birth onwards and by chewing and gnawing. If the jaws are small and the teeth overcrowded, mastication (chewing) cannot be properly performed, and the food will be left clinging to the teeth after meals and the teeth will decay.

Seven Rules.

In order that the jaws and teeth shall grow properly and the teeth kept clean and free from decay, you should observe the following rules:—

(1) As soon as an infant needs food other than milk (8 to 9 months) give it in a solid form, such as crusty bread, twice baked bread, or crisp toast, thus compelling mastication. Do not give bread soaked in milk or milk thickened with flour or other starchy foods, such as most patent foods. Encourage the child to chew and see that it breathes through its nose. In these ways good habits of mastication will be formed.

(2) As the child grows up you should still give most of the food in a solid form, compelling mastication. Food, other than milk, should rarely be taken in a liquid form. Vegetables and meat should not be minced and soaked in gravy. Bread should not be eaten new, and it should have plenty of good firm crust.

(3) After the first two or three years of life the child should have three meals a day and no food between.

(4) It is not advisable to drink at meal times, but plenty of water should be taken between meals. Milk is a food, and should only be taken at meal times, and must be followed by a tooth-cleansing food.

(5) All meals should be finished with a cleansing food (see below).

(6) Sweets, chocolates, and biscuits are very harmful to the teeth, if taken the last thing at night. They should only be taken at meal times, and should be followed by a cleansing food. The custom of giving milk and biscuits the last thing at night should not be allowed.

(7) Correct feeding and chewing are the best means of preventing decay of the teeth, though the intelligent use of the toothbrush will be found helpful.

If decay of the teeth or tenderness of the gums is noticed, the child should be taken to a dentist. Such conditions prevent mastication and bring about further decay. It is important for the sake of the child that the nursing and expectant mother should also go to the dentist if her teeth are in a bad condition.

Examples of the Various Kinds of Food.

Starchy Foods.—Potatoes; rice, tapioca, sago; bread, biscuits, &c.; oatmeal porridge; most patent foods.

Sugary Foods.—All foods to which sugar is added; sweets of all kinds; honey, syrup, jams, marmalade; milk.

Tooth Cleansing Foods.—Fresh fruits: apples, oranges, nuts; raw vegetables: lettuce, watercress, celery, radishes, onions; crusts[1] of bread, crisp toast, twice-baked bread; meat, fish, bacon.

The leaflet may be obtained from John Bale, Sons and Danielsson, Ltd., 83–91, Great Titchfield-street, London, W. 1., price 1*d.* each, 3*s.* 9*d.* for 100.

TEREBENE TOILET SOAP.

TEREBENE (Terebenum) is a well-known powerful antiseptic, disinfectant and deodorising liquid and its distinctive smell makes it particularly suitable for combination with toilet soap. The glycerine soap supplied by Messrs. F. S. Cleaver and Sons, Ltd., Honey Soap Works, Twickenham, Middlesex, a sample of which has reached us, has behind it a reputation of 50 years, and its soothing and antiseptic qualities recommend it as excellent for the toilet. Attention has already been drawn in these columns to the value of "Talcum," also supplied by this firm, as a pure talc powder for use in the nursery and wherever a dusting powder of this kind is indicated.

QUEEN MARY'S CONVALESCENT AUXILIARY HOSPITALS, ROEHAMPTON.

A STATEMENT has been issued by the committee of the hospitals dealing with the work accomplished therein from 1915 to 1923, and with plans for the future. Approximately 41,000 men required artificial legs and arms as a result of the war; the majority of these cases were dealt with at Roehampton House, opened on June 28th, 1915, with 25 beds, and later increased to 224 beds in October, 1915, to 550 beds in June, 1916, and to 900 beds in June, 1918. Since June, 1915, nearly 23,000 new patients passed through the hospitals, and over 47,000 cases were readmitted for second limbs and repairs. In addition, since January, 1918, nearly 20,000 cases were dealt with through the post. In 1916 instructional workshops and an employment bureau were opened in connexion with the institution; 8453 men received training in various trades and commercial classes, employment was found by the bureau for 4987 men on discharge from hospital, and for 4166 men arrangements were made for training in various trades after discharge from hospital. The instructional workshops are now closed as, happily, most of these disabled men have found suitable employment.

Now that practically all officers and other ranks have received their duplicate limbs the number of in-patient beds is 250. The out-patient department has, however, increased very considerably; the average attendance is about 52 per day, rising in busy seasons to as many as 90. Dover House (adjoining Roehampton House), for the use of officers, is now closed, and arrangements have been made for their accommodation at Roehampton House, where 13 beds are available. In consequence of the number of surplus beds, arrangements are being made with the Ministry of Pensions for the accommodation of 500–600 general medical and surgical cases from the Special Surgical Hospital, Shepherd's Bush, which is closing at the end of the year. This will necessitate a further large capital expenditure for the alteration of existing huts and the erection of new semi-permanent wards, operating theatres, &c. The care of the limbless patients is in no way to be interfered with by this arrangement, and it is hoped to further extend the benefits of Roehampton to a limited number of railway employees and others who have the misfortune to lose their limbs in the course of their employment.

It is hoped that support by donations and endowment of beds may continue, so that the committee may be able, with the help of the capitation grant received from the Government, to maintain the institution in its present high state of efficiency. The hon. treasurer of the hospital is Sir Charles H. Kenderdine, K.B.E., 12, Little College-street, London, S.W. 1.

PUBLIC HEALTH IN SOUTH AFRICA.

THE Official Year Book of the Union of South Africa[1] contains a chapter devoted to public health and hospitals in the Union. The history of public health prior to the Union and from 1910 onwards is briefly traced, and particulars are given as to the appearance and prevalence of certain diseases, among which are the following: Cholera has twice appeared since 1888 in ships bound from Asiatic ports, but no epidemic has occurred on land. Diphtheria occurs throughout the Union, especially during the colder months, but serious outbreaks are rare. Bacterial dysentery of a mild type is not uncommon in summer, but amœbic dysentery is comparatively rare. The annual notifications of typhoid or enteric number between 4000 and 5000. South Africa suffered heavily during the influenza epidemic of 1918, there being 139,471 deaths up to the end of November of that year. Leprosy, which existed among the Hottentots before the arrival of Europeans at the Cape, had been separately dealt with by several of the component States before the Union came into being; the total number of lepers of all races segregated at the end of 1918 was 2230, and the number of unsegregated lepers is estimated to exceed 1000. Malaria is endemic in parts of Zululand and of the Transvaal, and at times becomes epidemic over wider areas, but European settlements and increase of cultivation and drainage is circumscribing the areas where the disease is endemic. Plague was unknown before 1899, but since that date numerous small epidemics have occurred, chiefly traceable to rats in shipping from India and South American ports. Small numbers of deaths were reported almost annually from 1912 to 1921, but no infections in rodents or other animals were discovered. In 1921 the existence of epizootic plague in certain wild rodents in the Orange Free State was established. There have been many severe epidemics of small-pox since the introduction of the disease in 1713; after the Cape Parliament Public Health Act of 1883 was passed and vaccination became compulsory, the outbreaks have almost all been of the mild "amaas" or "kafir-pox," so called because natives are chiefly affected. Tuberculosis, widely disseminated when from about 1880 onwards tuberculous Europeans began to come out to the dry elevated highlands of the interior, is now prevalent among the coloured and native population. As regards sanitation, considerable attention has recently been paid to water-supply, sewerage, public slaughter-houses, &c., in most smaller towns and in many villages. Maternity and child welfare is attracting an amount of interest which has greatly increased during the last few years. Most municipalities and some other local authorities have health officers and departments attached to the local authority, which is responsible for control of sanitation, outbreaks of infectious disease, &c.; health and medical work, for which the Union Government is responsible, is carried out by means of medical officers known as district surgeons, a few of whom in large centres are whole-time officers, the remainder combining part-time Government work with private practice. In each seaport a port health officer is appointed by the Union Department of Public Health (established 1919) to carry on the health inspection and control of vessels, and to assist immigration officers, in an advisory capacity, with regard to the physical fitness of immigrants to enter the Union. Tuberculosis is specially cited as a disqualification, special permission being required for a person suffering from the disease to enter the Union. Other sections of the Year Book are as useful and accurate as is the chapter here summarised.

FOR an extension of Bury Infirmary, to take the form of a children's hospital and to serve as a war memorial, over £40,000 are in hand. About £10,700 will be expended on the building, and the balance, which it is hoped to raise to £30,000, will be devoted to endowment.

[1] The coarse whole-meal flour is best for this purpose.

[1] And of Basutoland, Bechuanaland Protectorate, and Swaziland. Fifth year. 1922. Pretoria: Government Printing and Stationery Office. Price 5*s.*